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## TABLE OF CONTENTS.

	PAGE.
Editorial:	
North America and the Amazon Trade .....	33
Continued Tariff-Tinkering.....	34
The Rubber-Trade as Conducted in Pará.....M. F. Sesselberg	35
[With Illustrations and Map of the State of Pará.]	
Cotton-Elastic Webbing and the Tariff.....Victor Yarros	42
Expert Testimony in the Acid-Patent Suit .....	43
Rigole's Gutta-Percha Process Still on the Market.....	44
[With Illustration.]	
Taking an Interest in Employees.....	45
Rubber Goods in the Wilson Tariff Bill.....	46
Twenty-four Years a Rubber-Man.....	47
[With Portrait of John J. Voorhees.]	
New Goods and Specialties (Illustrated).....	48
Annual Meeting of the United States Rubber Company.....	51
Brief Abstracts of Recent Rubber Patents .....	51
Contributions to the Chemistry of India Rubber—IV.....P. Carter Bell	58
Give Hard Rubber a Chance .....	59
Some Views on Cravenette .....	60
The Outlook for the Mackintosh Trade .....	61
How Mr. Flint Helped Brazil .....	63
Rubber Salesmen On and Off the Road .....	64
Miscellaneous:	
Reorganization of a Rubber Company.....	34
A Victory for American Manufacturers.....	34
A Correction.....	34
The Chinnock Pneumatic Tire Co .....	50
The Wool-Boot Combination.....	53
William Morse & Co.'s New Store.....	55
Frank A. Magowan as a Railroad-Man.....	55
A Rubber Factory at Gloucester, N. J.....	55
Quick Results of Publicity.....	55
Random Notes from Pará.....	56
Coutinho's Rubber-Curing Machine.....	56
Making Rubber Stick to Iron .....	56
Old and New Shoe Compounds.....	56
Tuno Gum.....	56
Rubber News from Way Back.....	57
New Rubber Duties in Canada .....	57
The Latest News from Madagascar.....	57
Four Hundred Tons of Gutta-Percha .....	57
Some Uses of Rubber in the Year 2000 .....	57
The Stirling Water-Tube Boiler (Illustrated).....	62
Trade and Personal Notes.....	65
Review of the Rubber Markets.....	69

## NORTH AMERICA AND THE AMAZON TRADE.

THE article which we print this month on the crude-rubber trade in the Amazon valley not only is the most comprehensive that has ever been written on the subject, but it is the work of a careful and accurate observer who enjoys the advantages of a long residence in the rubber country and an intimate acquaintance with leading merchants there. It may be accepted, therefore, as an authentic relation of the facts in the history of Pará rubber, from the smoking process in the forest until it is afloat on the Atlantic. There are a few considerations which these facts doubtless will suggest to the reader.

It is evident, in the first place, that any fears of a scarcity of Amazonian rubber that may have been felt at any time have been idle. The Baron de Marajó, who is mayor of Pará, has already explained in THE INDIA RUBBER WORLD nature's method of perpetuating the rubber-forests, by the floating down stream, at the annual flood-time, of seeds which take root on shore and quickly produce new trees. But our latest contributor shows how small a part, comparatively, of the existing rubber area has been reached by the gatherers, so that virgin forests still await whoever is enterprising enough to enter them.

There is no more mystery in the buying of rubber from the producer than in buying tea in Ceylon or tobacco from the Virginia plantations. The rivers are open to all comers, and the people who have rubber are anxious to sell it. Common, every-day steamboats leave Pará or Manáos laden with such merchandise as is in demand the world over, and return with the products of the upper country, for which it has been bartered.

This trade may require a special training, but did ever such a consideration deter Americans from trying to buy or sell anything under the sun anywhere on American soil? This thought is suggested by the fact that, although the United States consume half the rubber product of the world and more than half that of Brazil, the steamers which ply on the Amazon are for the most part British, the rubber which they discharge at Pará is brought to New York by other British steamers, and payment is made for it through British banks. All this is true even of the rubber handled by the few North American houses at Pará. It may be added that the merchandise which filters through to the original handlers of the rubber is also largely of British manufacture.

Yet no climatic or other natural conditions exist which are more favorable to European than to American enterprise in the Amazon valley. It is simply due to a lack of our characteristic energy in this particular direction that every pound of crude rubber used in an American factory now first pays tribute in the shape of profits to European manufacturers who make the goods sold in Brazil; to European merchants who largely control the trading; to European ship-owners who furnish transportation; and to European bankers who handle the balances of trade. It is true that nothing of this sort is mentioned by our Pará contributor, but the thought not unnaturally comes to mind in consideration of the vast and growing traffic in

Amazon rubber, for which the United States furnish so good a market, though having scarcely a share in the profits of that traffic.

Possibly conditions that will be more flattering to our national pride—while putting more money into the pockets of our commercial classes—will grow out of the increasing interest in Amazonia manifested by the occasional visits of some of our rubber-men of late to that country. The part played in the settlement of the recent so-called Brazilian war by an important member of the United States Rubber Co. is in itself a fact of significance with respect to future trade relations between the two greatest American republics. It is worth while to consider how successfully some New England houses engaged in the rubber-importing business nearly a half century ago, when Mr. R. M. Everit represented his firm in Pará, as related by him last year in *THE INDIA RUBBER WORLD*. The influence of that engagement survives to this day in the use on the Amazon of the hatchets which he took out from Collinsville. The late James Barr Curwen has also told our readers—through an interview—of his part in rubber-importing when the United States figured more largely in that interest, comparatively, than they do to day. These reminiscences may prove of value in offsetting the idea that traffic on the Amazon is something for which North Americans are not fitted.

#### CONTINUED TARIFF-TINKERING.

FOUR hundred and three amendments have been made to the so-called Wilson tariff-bill by the senate finance committee since we put in type the matter in relation to that bill to be found on another page of this paper. The effect of some of these would be to place higher duties on rubber goods than are indicated in the table which we have had prepared, the increase in some cases entirely wiping out the reductions originally proposed from the McKinley law. The table already in type is preserved, however, as representing the proposed new law at one stage of its progress in the national legislature, and especially as representing the views of the tariff-reduction element among the people's representatives. It is not considered worth while to encumber our pages with all the amendments proposed from time to time, as it is likely that many months will elapse before any change in the existing duties will find a place on the statute-books. It is not probable that any tariff bill that may be passed will retain any vestige of that originally proposed by the committee on ways and means in the lower house.

#### REORGANIZATION OF A RUBBER COMPANY.

THE Williams Rubber Co. (New York) have ceased to exist as an independent concern, but it forms part of a new concern, the Coronade Rubber Co., which is a consolidation of the Williams Rubber Co. and David H. Smith & Co. Prior to this consolidation, Mr. W. D. Bloodgood, secretary and treasurer of the Williams Rubber Co., bought out Mr. Williams's interest, so that Mr. Williams has no connection with the reorganized concern. David H. Smith & Co. were in the rubber

business at No. 538 Broadway, Mr. Smith having been at one time a selling agent of the Metropolitan Rubber Co. The reorganization was effected under the laws of the state of New York, and additional capital has been put in. The liabilities and contracts of the Williams Rubber Co. are assumed by the Coronade Rubber Co. The officers are: David H. Smith, president; W. D. Bloodgood, secretary-treasurer; N. F. Sprague, superintendent. The factory remains in Crosby street, but the office and salesroom have been removed from No. 705 to No. 538 Broadway, where the accommodations are decidedly superior. The Coronade Rubber Co. will manufacture mackintoshes and cravenette garments, and will deal in rubber goods of every description. It is the agent of the Emerson Rubber Co. Mr. Bloodgood says the new company starts out with bright prospects, with large orders on hand and the promise of more.

#### A VICTORY FOR AMERICAN MANUFACTURERS.

THE India Rubber Comb Co., as agents for the Chicago Electric Wire Co., whose works are at Wilmington, Del., have obtained the first contract which has been awarded to an American manufacturer by the United States government for submarine cables. The company have now in process of manufacture some seventy-five miles of single- and seven-conductor cable for the United States torpedo service. Heretofore, the government has purchased such cables in England, as the requirements for this service are very severe, the rubber insulation demanded being of the highest quality. The India Rubber Comb Co. are especially pleased at receiving this contract, as they themselves furnish the rubber with which the cables are insulated.

#### A CORRECTION.

TO THE EDITOR OF THE INDIA RUBBER WORLD: On page 27 of your issue of April 15, the following appears:

—In the superior court at New Haven a temporary injunction has been granted on the application of the Rubber Reclaiming Co., restraining the Derby Rubber Co. from disposing of their stock in the former concern. The Derby Rubber Co. hold practically the controlling interest in the Rubber Reclaiming Co. The Reclaiming company claim that the Derby company are disposed to sell this stock to parties who would not be friendly to the other stockholders in the consolidated concern, hence the injunction.

We respectfully ask that in your next issue you will say, with equal prominence:

1. That the injunction referred to was not granted on the application of the Rubber Reclaiming Co., nor was said company in any wise a party thereto.
2. That the Rubber Reclaiming Co. is not engaged in any litigation of any kind with the Derby Rubber Co.
3. That the Derby Rubber Co. does not hold, practically or otherwise, a controlling interest in the Rubber Reclaiming Co.

THE RUBBER RECLAIMING CO.

In the report of President Banigan at the late meeting of the United States Rubber Co. will be noticed a suggestion that wider cloths be used in the manufacture of boots and shoes. The bare statement may not impress one as being very important, but, as a matter of fact, a very considerable economy will be secured through the use of these cloths. The cloths will be woven 72 inches wide and the waste rubber on the edges and the waste cloth in the selvage will be much less than on the ordinary narrow widths. For a long time past Mr. Banigan has been spreading the linings for boots on these wider cloths and has found it a decided saving in money.

## THE RUBBER TRADE AS CONDUCTED IN PARÁ.

By M. F. Sesselberg.

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## I—THE STATE OF PARÁ.

THE state of Pará comprises fifty-three districts, corresponding to the counties in the United States, though in Brazil they are called municipalities.

Forty-nine of these produce India-rubber, but the bulk of the production comes from thirty-five, the remaining districts having supplied during the past year only about ten tons. Each municipality is governed by a mayor (called *intendencia*) and from five to thirteen councilmen (called *vogaes*), elected for a term of three years. The municipalities comprise districts of varying sizes, some covering thousands of square miles and some only hundreds, the largest village, town, or city being the center. From these towns generally the municipality officers are chosen, and in them the legislative meetings are held. Although in a few cases the state gives aid,—such as helping to build a pier or a municipal building, or to make some other important public improvement,—these municipalities are self-sustaining, the revenue being obtained from taxes of several kinds, but especially those on the produce grown in them. These taxes on produce are collected in the city of Pará, it being utterly impossible to do it within the municipalities, as most of the places from which shipments are made are too far distant from the center of the district. Hence, when a steamer or canoe arrives in the port of Pará, the captain is obliged, under penalty of a heavy fine, to furnish the collector of the state with a manifest of the whole cargo, and only on presentation of a clearance certificate from the state collecting department (called the *recebedoria*), to the officers on duty at the discharging piers, can the produce be taken away by the consignee. This tax varies, as each municipality has its own rate, but the average on rubber is from  $\frac{1}{4}$  to  $\frac{1}{2}$  cent per pound.\* When collected it is credited in each case to the proper municipality, subject to the orders of its mayor.

The rubber produced in the state of Pará is sold under the names of "Islands," "Cameta," "Itaituba," and "Xingu." Islands rubber is that produced on the island of Marajó and the other islands in its immediate vicinity, together with all that from every other part of the state except the Xingu, Tocantins, and Tapajós rivers. Cameta rubber comes from the Tocantins river. It is noted for the superior quality of its "sernamby" grade, the "fine" being the same as that from the Islands. Itaituba rubber comes from the Tapajós river, and, in fact, should get its name from that river, for Itaituba is only one port on the Tapajós. It is known for the rather gutty appearance of the "fine" and its stringy, dirty "sernamby." Xingu rubber comes from the river of that name. It is noted for the specially good cure of its "fine," the "sernamby" being only a little dryer than Islands rubber, though of the same

quality. Although there are other parts of the state from which rubber comes—even within the municipality of the city of Pará—yet all except that from the three above-mentioned rivers is classed as Islands.

## II—SOURCES OF THE RUBBER PASSING PARÁ.

IN the following table, from the department of statistics of the state of Pará for 1892 (the figures for 1893 being yet incomplete), the names are given of the rubber-producing municipalities, together with the yield from each:

## ISLANDS RUBBER.

[Production of Marajó and Adjacent Islands by Municipalities, in Pounds.]

Affua .....	849,684	Meljaco .....	1,078,968
Anajas .....	2,264,980	Monsaras .....	2,640
Breves .....	2,806,097	Muana .....	324,471
Cachoeiro .....	21,318	Ponte de Pedras .....	66,694
Chaves .....	274,362	Portel .....	342,870
Curralinho .....	597,372	S. Caetano .....	37,437
Gurupa .....	1,262,925	Vigia .....	60,280
Macapa .....	1,011,194	Veiros .....	123,567
Mazajão .....	937,086		
Total .....			12,051,945

[Production outside of the Island of Marajó and its vicinity, but classed as Islands.]

Acará .....	109,606	Novo, Soure, and Bragança) .....	13,831
Alemquer .....	5,621	Maju .....	183,046
Almeirim .....	485,091	Praiaha .....	14,186
Bagre .....	220,900	S. Domingos, Buena Vista .....	73,642
Vicinity of Pará city ..	169,417	S. Sebastião, Buena Vista .....	332,549
Colares, Curuca, and Foro—(Irituia, Iru-tutu, Marapirim, Monte Alegre, Ourem, Santarem)		S. Miguel, Guama .....	14,086
Total .....			1,621,975
Total Islands rubber .....			13,673,920

## CAMETA RUBBER.

[Production on the Tocantins, by Municipalities.]

Abaete .....	142,854	Icaripe-miry .....	360,861
Baião .....	148,262	Mocajuba .....	268,397
Cameta .....	1,114,846		
Total .....			2,035,250

## ITAITUBA RUBBER.

[Production on the Tapajós, by Municipalities.]

Aveiros .....	112,038	Obidos .....	1,656
Itaituba .....	759,514	Santarem .....	139,491
Total .....			1,012,699

## ZINGU RUBBER.

[Production on the Xingu, by Municipalities.]

Porto de Moz .....	40,101	Souzel .....	644,857
Total .....			694,958

## SUMMARY.

Islands—Marajó and vicinity .....	12,051,945	
Other sections .....	1,621,975	13,673,920
Cameta .....		2,035,250
Itaituba .....		1,012,699
Xingu .....		694,958
Total product of the state of Pará .....		17,416,827

Similar statistics cannot be given from the the state of Amazonas, of which Manaus, further up the Amazon, is the capital and chief port. A fair estimate of the yield of this state for 1892, from the principal rivers, is as follows:

\* This is in addition to the state tax on rubber exports, which, by the way, is likely to be supplanted by land taxes.—THE EDITOR.



	POUNDS.
River Madeira.....	3,000,000
River Purús.....	6,000,000
River Juru.....	4,000,000
River Javary.....	4,500,000
Rivers Negro, Iça, Japura, Jutahy, and other small streams..	2,000,000

Total..... 19,500,000

If we now use round numbers we may arrive at an approximate estimate of the amount of rubber which passed through or by the port of Pará during 1892 : \*

	POUNDS.
Product of the state of Pará.....	17,500,000
Product of Amazonas.....	19,500,000
Product of Peru.....	2,000,000
Product of Bolivia.....	1,000,000

Total..... 40,000,000

### III—THE OUTFITTERS IN PARÁ.

THE receivers of rubber in the city of Pará are called *aviadores*,† which is equivalent in English to "furnisher," or, better, "outfitters." These outfitters furnish to their customers in the interior, not only of this state, but also in the state of Amazonas, invoices of merchandise, comprising an assortment of almost every conceivable article, but principally groceries, including not a small quantity of *cachaca* (native rum made from sugar-cane juice.) Some of these customers may in their turn be considered outfitters, as they divide their goods and ship them further on to other customers, while sometimes the receivers of the goods may be the retailers themselves, who order the goods to supply their own laborers, as well as retailing. Besides the permanent establishment in the towns or villages, some of these customers may, during the rubber season, have temporary places of business at the end of a long river into which run a large number of smaller rivers, even down to creeks, all too shallow for steamer navigation. Instead of receiving their goods in town they prefer to have them delivered at the entrance to this river, where they divide the greater part of them, keeping some for local trade to other customers of their own, and so on, until every available point is reached.

On the other hand, the establishment may sell direct to the rubber-gatherer; in many cases on each bank at the mouth of the river will be found several "firms" constantly endeavoring to "outdo" all of the others. All of these may sell direct to the rubber gatherers and fit out "middlemen," or the receiver of goods may get them delivered to his very rubber-field. Sometimes on an unnavigable river there may be established several firms who receive goods direct from the city outfitter. At the entrance to this river will be a covered pier, the owner of which (who may have his retail shop there) allows goods to be left until called for by their owners. These are generally on the spot to receive them, because, since the steamers leave Pará on fixed dates, it is easy to calculate the time of their arrival. When the steamer is delayed in such a place, and several

of these customers have come to port in their canoes, accompanied by sufficient men to do the work, there is sure to be a game of cards, similar to baccarat (called *paca*), in which large sums of money may change hands among the bosses, while the laborers easily get up a "break-down," which will go on day and night, with the aid even of only a banjo when there is no other music available. The quantity of *cachaca* consumed on these occasions is sufficient to give a prohibitionist an apoplectic fit. Yet, strange to say, a quarrel or "row" seldom occurs.

Although there is always a bitter competition among these traders, when they get together they compare the account-sales of rubber which they receive, and should one have his sold at a better price than the others, the city outfitter will receive by first mail a forcible "reclamation." During the height of the rainy season, from February to about the end of June, the customers, or, more directly, the middlemen, are for the most part at their places in the towns and villages, some of them leaving clerks at the more substantial outposts to attend to what local business may turn up, and it is during this time that they sometimes come to Pará on business or for a fortnight's or a month's holiday. But the rubber-collector proper is living in his hut, the land about which is partially or completely inundated, his only means of subsistence being the sap that he can extract from the trees. He uses small canoes when he cannot wade up to the trees. He cures the rubber as best he can, and, taking it to the first shop or "station," he exchanges it for his week's or fortnight's supplies, often being obliged to use his credit (if he has any) for part even of these. When, however, the rains cease, and two important saints' days (St. John's on June 24th and St. Peter's on June 25th) are passed,—these days being celebrated with all the pomp that can be mustered, likewise being devoted to the baptism of children and card- and dancing parties,—these rubber-gatherers begin to move.

Then too the middlemen, likewise customers, start out for their fields of operation, living in palm-thatched huts, built at convenient points, or in perhaps the ones (repaired or re-built) used the year before, or still in their more substantial board-sided, tile-covered establishments (re-opened) which comprise a shop, a sleeping-room, and an open back piazza, this last serving as dining-room, store, and kitchen.

Although the steamers run all the year, taking out or bringing back more or less cargo, it is at this time that they leave Pará loaded to their utmost capacity with merchandise, and overcrowded with passengers. These last occupy every available space 2 × 4 feet (boxed like sardines) under both decks, or wherever a hammock can be hung. Cargo and passengers are delivered at their destinations, and goods reshipped in canoes to places which steamers do not, or cannot, reach. In fact, a general distribution is made to customers and consumers, and placed within the reach of even the furthestmost inhabitants up to the smallest creeks, and up those rivers which become dry during summer, and a full season's stock is sent, for not until the next wet season can more goods be sent to these points,

\* Custom-house returns of the exports of rubber have been kept at Pará since 1839, in which year 836,359 pounds were exported. The total exportation up to the end of 1893 reached 675,060,820 pounds. This latter amount, at the present rate of consumption, would supply the whole demand of the world for ten years.—THE EDITOR.

† *Aviadores* ship very little rubber on their own account, as a rule. Messrs. Antunes & Co. and Messrs. A. Berneaud & Co. ship some.





MAP OF THE STATE OF PARÁ, BRAZIL.\*

[WITH LINES DRAWN TO SHOW THE PRESENT LIMITS OF THE RUBBER-PRODUCING DISTRICT.]

## IV—AMONG THE RUBBER-GATHERERS.

RUBBER-GATHERING is done in many different ways. One man, with his wife and children, these last even of five or six years helping, may live up some creek. When the rubber is cured—perhaps once a fortnight, or once a month—accompanied by his whole family, he paddles his canoe to the first station (this may be at the mouth of the creek, or even midway) where some enterprising middleman runs his shop, together with several rubber-paths, which he lets out or employs men to work. Perhaps this rubber-gatherer

\*Copied from a map in the book "The State of Pará," copyrighted by the Baron de Marajó.

goes further on, if he thinks he can get a better price for his rubber. Wherever it may be, his produce once disposed of, he purchases his dried beef or fish, *farinha* (coarse mandioca flour, which serves in place of bread), the inevitable rum, and, if his means admit of luxury, a few fancy articles. As to the middleman, when he has received a lot of rubber he packs it in the empty cases and barrels in which he has received his goods, or, not possessing these, he threads it on sticks about three feet long, or on bits of flexible vine called *cipo*, which he cuts a few rods from his hut and ties together by a knot. Either of these latter lots contains from 25 to 50 pounds.

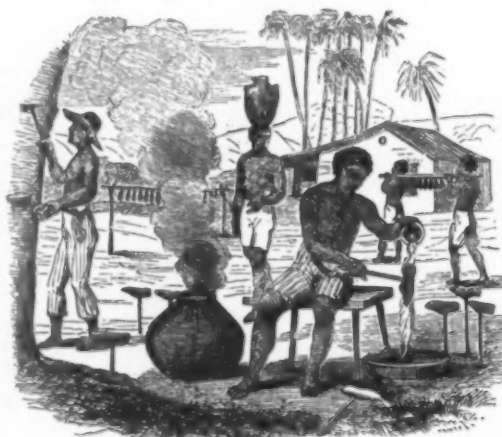
Sometimes several men club together to prepare their rubber and forward it to market. Again, another party may work a section with hired men under monthly pay, forwarding his rubber to market. Formerly such a party owned slaves, which was more profitable, as he forced them to collect a certain quantity per day. The most general way, however, is in individual labor, each one for himself, *i. e.*, in milk-collecting or rubber curing. Many tracts of rubber-producing lands are owned in larger or smaller quantities by those who establish themselves thereon, or as near the center as possible, but always on the river-front. The owner lets out these tracts for the season in "paths" of about 100 trees, each path at a monthly rental of 15 pounds of cured rubber, generally obliging the collector to sell the rest of his collection to himself. Some firms in Pará own also large tracts of land in these rubber districts, and one firm especially a very large tract covering many hundreds of square miles. Here these firms have their own customers, to whom they let a certain space, and these in their turn sublet paths to their collectors.

Middlemen who hire a tract of land, letting it out in rubber-paths, have to keep a sharp lookout on their men, for often some of them will take offence at some fancied injustice, and will carry their collections to a competitor, even should they be owing the first one for the last week's rations. As these rubber-collectors generally come to the trading-hut on Saturdays to pay their rent when due or sell their rubber, if they don't turn up a canoe is despatched to look out for "owner's interests." On nearly all the small rivers are to be found canoes, the owners of which are regular "wandering Jews." These canoes are fully-supplied floating shops, which wander about. They supply everything from a pack of cards to a spool of cotton, and succeed in trading much better than do the land shops. The owners receive every earthly thing in payment, from a pound of rubber to a pair of chickens. As is to be naturally supposed, the land shop-keepers detest these Jews like poison, and every effort is made for their extermination. Heavy taxes are levied upon them—in some municipalities as high as \$500 per year—but still they thrive. In one place they were driven out by force of arms, for they sold merchandise at less than cost, and bought rubber at higher than city prices, and in fact had monopolized nearly all the trade. How this was done no one knew, and many were the accusations, the most lenient of which were false weights and erroneous calculations, all against the poor rubber-collectors.

Finally the rubber collected reaches the hands of those who have their patrons in the town or city, and awaits conveyance to the markets of Manáos or Pará. If the

rubber is on steamer routes it is shipped, and boats will call at every hut or trading-post outside of towns and villages; sometimes they will only get a few pounds, while perhaps next time they may receive several thousand pounds.

A steamer will leave Pará on a route taking six days out and six days back, with only three days' actual steaming each way, the rest of the time being consumed in stoppages. The steamer will pass through six or eight municipalities and stop at 150 to 200 places. A steamer may only touch at a point or mouth of a river and find here awaiting it a dozen or more canoes (some very large ones), from all of which he may receive 20,000 to 40,000 pounds of rubber, *i. e.*, in the height of the season. These canoes have come from a long distance, probably a five or six days' sailing trip, and as many or more back. If the city price does not suit the customer, the rubber is held back, and in many instances only towards the end of the season does he forward it; or perhaps in other cases it cannot be sent to town until the river rises, allowing the canoes to fetch the rubber. This occurs in many places on the rivers in the state of Amazonas, such as the Madeira, Purús, Negro, Javary, Jutahy, Iça, Japura, and Solimoes,—in fact on all the upper rivers, there having been cases of a steamer's receiving at one point alone 150,000 to 200,000 pounds at the end of a season.



BRAZILIAN NATIVES MAKING RUBBER SHOES IN 1848.  
[The original form in which India-rubber was exported to the United States.]

V—THERE ARE TRICKS IN EVERY TRADE.

In the Island districts this never occurs, only perhaps somebody may start out from a place on the southern coast of the Amazon, where little or no rubber is found, and work the whole season, taking back his collection to the starting place, and this accounts for such places as S. Caetano and Vigia, where very little rubber is found, sending to market nearly 100,000 pounds. Another instance is in the Xingu rubber, the output of this river being much more than reported in the statistics. This is probably caused by the want of steamers navigating this river, thus causing the rubber to be sent to a point outside, and its being credited in the official returns as coming from some other municipality. As rubber reaches the middlemen, the "fine" is carefully stored under cover, not much care being taken to keep it away from dust and mud, which adhere to it, giving more weight. The "sernamby" can stand out in rain, and even in water, of which it will hold a good quantity, much to the advantage of the owners. Cases have occurred where the middleman will have under his small pier a compartment where he will keep his sernamby the whole season, sunning it only a few days before shipping, which gives it a beautiful black and dry appearance, but the water is inside!

Other cases have occurred where the sernamby is packed into barrels filled with water, which is allowed to ooze out,

a few days before shipment or even on the voyage, through holes cut for the purpose. The following incident will illustrate such an occurrence: An exporter in Pará had bought a lot of eight or ten tons of rubber from one of these middlemen, who had come to the city to turn it over to his patron, take his fortnight's or month's holiday, talk over matters, and attend to business generally. The buyer's receiving-clerk, while attending to the cutting and weighing, found the sernamby more than usually damp and claimed a heavy allowance for loss in weight. The claim not being accepted, he refused to receive the rubber. This brought buyer, seller, and owner together, and the laborers continued to open several lots to have a thorough examination. Among the packages was a kerosene-barrel, out of which, when one of the heads was pounded in, came a great splash of water. There were expressions of surprise and laughter from every one present, except the customer from the interior, who was somewhat confused, and to whom were directed looks of inquiry. He walked around the barrel and glared at it, then suddenly struck his forehead violently with his hand, and exclaimed: "I forgot to take out the bung!" Tableau, and renewed laughter. He had packed the sernamby into the barrel and filled it with water, but had forgotten to remove the bung to let out the water not retained by the spongy sernamby rubber. There are others than the traditional "heathen Chinee," who, "for ways that are dark and tricks that are vain," are peculiar.

#### VI—STEAMER TRADING IN THE INTERIOR.

STEAMERS leaving Pará for the different "Island" routes\* consume from ten to fifteen days on the trip out and return, and those for other parts of the Amazon require more time. A round trip to the Madeira river takes about seventy days, and one to the Purús from two to three months. Only in the months of January, February, and March can the steamers on the upper Amazon enter some of the tributaries of the river, and those that endeavor to do so at other times are left high and dry on sand-banks for months. During these months the outfits are prepared for those rivers which are unnavigable during the dry season, and a whole year's supply is sent to these customers who are utterly "dried up" in their districts. The only news heard from them is by an occasional launch, and there are some districts that even a launch cannot reach.

The following description of a voyage of one of these steamers to the Islands, the *Brito*,† will give a better idea of how one part of the rubber trade is conducted. This steamer, of a carrying capacity of 250 tons, left port on a

\* All rubber comes by steamer, except about sixty tons a month from the islands in the immediate neighborhood of Pará.

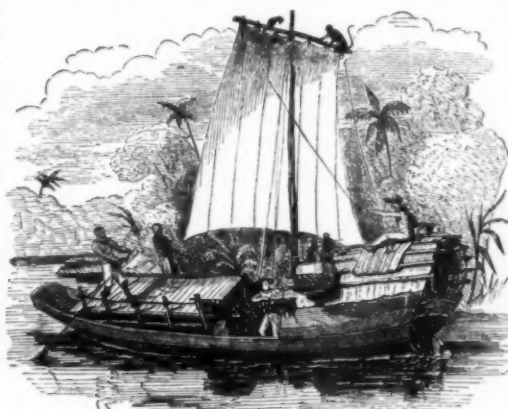
† Owned by one of the largest firms of receivers from this district—Velhote, Brito & Co.

ten days' voyage out and back, of which six days were passed in steaming and four in stoppages. Her speed being calculated at nine miles per hour, the number of miles steamed on the trip would be 1296 miles, or about 800 miles out and 500 back. She touched at 111 places on her outward trip, and at 36 on her homeward trip, puffing and blowing her whistle to call or awake the people, so as to deliver her outward cargo and receive rubber on board at ports she would not touch on her return. Within one district, about thirty miles long by thirty miles wide, there are eight islands, and the steamer must go around all of them. Consequently, on her return voyage it would be useless for her to retrace her route. At these 111 ports she received 98 tons (say 215,000 pounds) of rubber, in all sorts of packages and bundles, from 347 shippers. This was intended for 102 consignees in Pará, the largest single shipper having about 4000 pounds and the smallest 75. The largest consignee in the city received about 32,000 pounds; next came two of 10,000 pounds; then three of 9000, four of 7000, six of 5000, eight of 4000, and the rest in smaller lots, down to 150 pounds.

By following her course on the map of the state of Pará it will be seen what a zigzag voyage the *Brito* made. Leaving the port of Pará, she touched at Ponte de Pedras, passed Muana, Curralinho, and Breves, went through the straits of the island of Jabam, all around the islands of Jacare, Tpauta, Jipurei, Anajas, up Affua, and Chaves, crossed over to Macapa around the Parcos and Pará islands, also those of Mutuhy, Iterguara, back through the straits to Melgaco Portel, past the island of Pacayahy into

the lake of Caxuma river, up the Anapu river, and back to Pará, delivering and receiving cargo on rubber-fields, at towns, villages, on piers, to and from canoes, and in fact every sort of stopping-place imaginable. Similar to this are all the voyages, whether in the upper or the lower Amazon valley, no matter on what river. On the river Purús and her tributaries there are about 350 stopping-places.

This outfitting business has its drawbacks, for there are very few customers in the interior who at the end of the year do not owe a balance to their outfitter. When there has been a "boom" in prices of rubber they may settle their accounts, but at no far distant time they will be in debt again and continue so for years and years. The only way to do this business safely is to receive first from the customer 110 per cent.—100 to pay for his invoice and 10 per cent. for shipper's commission. Firms in the business have to continue it, for a liquidation means disaster. Consequently partners retire, new ones enter, and the business is continued. Middlemen are almost always in debt. It is acknowledged that the rubber they collect belongs to the city outfitter, for, having obtained on credit their "outfit"



AN AMAZONIAN CANOE OF 1848.

[The style of craft in which crude rubber formerly reached Pará.]





VIEW OF A COMMERCIAL PART OF BELEM, OR PARA.

[BY PERMISSION, FROM "THE STATE OF PARÁ," BY THE BARON DE MARAJÓ.]

for the purpose of collecting rubber—sometimes amounting to many thousands of dollars—they are in duty bound to send the rubber to the outfitter. In case a middleman should owe one outfitter and ship his rubber to another, the first one will seize the rubber if he can and gain his case, although the second may have a bill of lading for it.

The death of one of these customers often means a bad debt or, more properly, a clear loss. His small debtors consider their accounts settled, and when the outfitter, having received news of the death, sends some one to the interior to look after his interests, the customer's shop will be found empty, and he will return empty-handed. The larger customers have partners to avoid such a disaster in case of death. Of all the rubber that is produced in the valley of the Amazon a very small amount, say less than 10 per cent., is shipped for account of middlemen or producers, the rest being sold either in Pará or in Manáos. Thus it may be considered that the bona-fide owner of the rubber is the outfitter, and to him alone belongs the right to sell it to shippers in either of the above ports, and which is done principally in Pará, as this city exports yearly 30,000,000 pounds of the 40,000,000 which the crop yields.

## VII—THE ARRIVAL AT PARA.

When a steamer from the interior reaches Pará she comes alongside one of the covered piers with which the city front is covered and discharges her miscellaneous packages. Those steamers coming from the principal part of the Amazon generally bring the fine rubber in large pieces or junks, while the sernamby is packed in boxes, barrels, crates, etc. The island steamers bring both qualities packed in the same style,—strung on pieces of vine

and wooden sticks. The Amazon rubber comes consigned to comparatively few houses compared to the rubber from the islands. When an island steamer arrives in port the consignee sends his clerk to clear it and to pay the municipal tax at the state department, while he himself goes round among the rubber buyers to sell the cargo at the best obtainable price. He almost always disposes of it a day or two after arrival and delivers it as soon as possible, for the rubber is constantly losing in weight. Besides, the steamer returns in a few days, and all desire to send the account-sales as early as possible, much as the middleman wishes to receive it, and if kept in the hopes of obtaining a better price in the near future he gets no thanks for it. If the price declines his customer is not satisfied and is sure to complain, and if the price advances he gets no thanks.

With the receivers of rubber from the rivers or the upper Amazon the case is different. The rubber received from these districts is dryer, and if they cannot obtain the price they think they are entitled to they will hold it out of the market, and some few of them will ship it on their own account to New York or England. Having cable communication they can sell it "to arrive," after which sale they have time to prepare it for shipment. But not all the receivers are sufficiently conversant with these markets to be able to calculate the comparative values. Although there are brokers in Pará very little is sold through them, as sellers are generally distrustful, and in a bargain endeavor to obtain a cent or two in reserve outside of the general market price, which bonus they consider as belonging to themselves, as no commission is charged to the middlemen for the sale of the rubber, it being considered

a cash payment; also because their outward invoices have a commission of 10 per cent. charged on them. All cargoes, whether outward or inward bound, are insured in companies established in Pará, all of which have a good business. Besides the 40,000,000 pounds of rubber a year, worth upwards of \$20,000,000, there is the insurance to be placed upon an equal value of outward cargoes, and the still further value of other qualities of produce.

As soon as the rubber is sold to the exporter the labor comes of receiving it. This is done by companies of laborers—blacks and Indians. Each of the large exporting-houses has its own company, the captain of which is responsible to his patron for its work and conduct. As a rule these people work day and night during the height of the season. Owing to the increasing cost of living in Pará, the charges of these companies have become very heavy, being now about 8 milreis a day and 10 milreis a night per man. These companies, with the patron's clerk, proceed to the seller's warehouse, open packages, cut all the fine rubber, separating the medium, nothing less than half a sheet being separated from the other, for in cutting the sheets flaws or defects in curing may be found in one half of the sheet, the other half being fine. Many years ago all the sernamby was cut, for there were two classes, one called "grossa," or coarse, which was a superior quality of sernamby, and the poorer called "negrohead." Now all is called sernamby, and nowadays only one exporting-house cuts Cameta sernamby.

Fine and *entrefine* rubber are boxed in cases made of American pine lumber, the fine and medium in boxes containing 170 "kilos," and the coarse in boxes containing 300, or 280 "kilos" net, according to the wet or dry condition of the rubber. This sernamby box goes to the buyer's store or warehouse, and it is immediately packed ready for shipment. In front of all the exporting-houses (except two who pack indoors) is a row of empty boxes, tared and marked, and the exact quantity of rubber previously weighed in the store is carted out and dumped alongside of a box, and company laborers pack it, and nail the cover, when the full box is carted back into the store and stored away to await shipment. In those stores where the rubber is packed indoors, the packing commences in boxes laid close alongside of one another, and as soon as this tier is full and the cover nailed, another tier is filled, and so on up to the fifth or sixth tier. The day or night before shipment these boxes are carted on hand-trucks to the shipping wharf. On the day of shipment, after being cleared at the custom house and the provincial duties department, they are shipped in lighters, these being towed alongside of steamers taking it. When one of these cartings to wharf occurs during a night, and it sometimes happens that the whole night is thus taken up, the people living in the neighborhood have a troubled sleep.

It is worthy of note that all the sales of rubber in Pará are made by word of mouth, no contract between the parties being signed, and rarely is this word broken. In fact only two or three such cases have ever occurred, and in these the quantity was insignificant, while the sellers were boycotted by all the principal purchasers.

#### VIII—THE INEXHAUSTIBLE SUPPLY OF RUBBER.

THE annexed map of the state of Pará is an excellent one for its size, although many hundreds of small rivers, branches of others, and creeks are wanting. Yet even from this map can be obtained an excellent idea of the immense water system navigated by dozens of steamers, belonging to several different lines. Take the river Guapara and its tributaries, which are navigated by steamers up to Ourem, Capin, Acara, Cairary; the river Tocantins up to Baião, although navigable up to Alcobaca; those of Araticu, Jacunda, Camaraipy, Pacaya have no line of steamers; that of Amapu up to about 30° south latitude, that of Xingu up to a short distance above Souzel, that of Tapajós up to a short distance above Itaituba, where falls obstruct it; the immense number of islands to the west of Marajó, all of them, no matter how small, full of creeks and inlets, the number of sounds and passages around them; the northern coast of Marajó island, into which empties the Rio Anajas, navigated by steamer beyond Anajas, also its different branches; the northern coast of the Amazon river, all the tributaries navigable by steamers, and navigated by them only a short distance. The rest of the distance up all these rivers is traversed by thousands of canoes, of all sizes, and with many more thousands of people obtaining their livelihood from the natural products which they yield so freely.

Take all these facts into consideration, and, furthermore, that there still exists in this state thousands of square miles of unexplored rubber-forests. Then take into consideration that in the state of Amazonas many times more unexplored lands exist, in which rubber abounds, and, even beyond all these facts, that the rubber-tree is continually reproduced, so that the rubber forest is self-perpetuating. Now, is there any necessity of making rubber-plantations? Not for hundreds of years to come—perhaps thousands. Many of my readers will live to see the rubber crop of Brazil, which is now about 40,000,000 pounds, go into the hundreds of millions. Should the increase in the crop of rubber continue as heretofore—and there is no reason why this should not occur—thirty years hence the crop for one year will amount to the enormous quantity of over 300,000,000 pounds. There are still thousands upon thousands of waterways unexplored which will accommodate millions of laborers. Much wiser will it be for those who have ideas of planting rubber-trees to employ their genius in inventing manufactured articles which will consume the constantly increasing quantity of the crude article available.

**BICYCLES IN CANADA.**—According to statements in Canadian papers, a surprisingly large number of bicycles has been sold this spring in Canada. The *Toronto World* says that since the introduction of the pneumatic tire the bicycle has steadily grown in favor among the Canadians, and in the course of a year or two the sales must reach enormous proportions. The protectionist press believes that the bicycle-industry could be developed on Canadian soil if a prohibitive tariff were imposed on all foreign machines. Whether they would put a high duty on tires as well, they do not state explicitly.

## COTTON-ELASTIC WEBBINGS AND THE TARIFF.

By Victor Yarros.

A QUESTION has recently been finally settled that had been a mooted one ever since the decision of the board of general appraisers, at New York, in the case of Shattuck & Binger against the collector of customs of the port of New York, in 1890. The decision which is regarded by all parties as the final settlement of the controversy was rendered on February 5, 1894, by the board of appraisers. To make plain the question in all its important bearings, the story must be told from the beginning.

The first case, which was the starting-point of the controversy, involved certain goods imported by Shattuck & Binger and invoiced as "elastic webbing," numbered 125, 346, and 356. The goods were classified by the collector as follows: The goods numbered 125 as manufactures of silk webbing, silk being the component of chief value, assessed at 50 per cent. *ad valorem* under paragraph 412 of the tariff law of 1890, which dealt among other things with silk webbing; the merchandise numbered 346 and 356 was assessed at 40 per cent. *ad valorem* under paragraph 354, as manufactures of cotton webbing. The appellants, Shattuck & Binger, disputed the collector's classification and assessment, claiming that India-rubber was the component material of chief value in the merchandise under consideration and hence should be assessed under paragraph 460 of the tariff act, which dealt with goods of which India-rubber was the component of chief value, fixing for such a duty of 30 per cent. *ad valorem*. The appellants submitted a manufacturer's affidavit to support their contention. The board of general appraisers, before deciding the case, submitted the merchandise to the chemist in charge of the United States laboratory for analysis and report. The chemist reported that the goods were in fact composed of silk, cotton, and India-rubber, and that in No. 125 silk was the component material of chief value, while in Nos. 356 and 343 India rubber was the component material of chief value. The result of the analysis and valuation was expressed as follows:

MATERIALS.	EXHIBIT A—125.		EXHIBIT B—346.		EXHIBIT C—356.	
	Quan.	Value $\$$ 100 p.	Quan.	Value $\$$ 100 p.	Quan.	Value $\$$ 100 p.
India-rubber.	39.73%	\$32.27	31.83%	\$25.87	35.31%	\$28.58
Silk.....	16.38%	35.87	8.73%	19.11	10.15%	21.92
Cotton.....	43.89%	19.94	59.49%	20.13	54.59%	21.54

With this result before it, the board of general appraisers decided that, so far as Exhibit A was concerned, where the component of chief value was silk (as the table shows), there could be no doubt of the propriety of assessing it 50 per cent. under paragraph 412. As to the Exhibits B and C, the board sustained the collector's classification of the goods under the cotton paragraph on theoretical grounds. It was necessary, said the board, to ascertain the intent of congress and to make the

assessment so as to carry out, and not defeat, that intent. Now both the silk paragraph and the cotton paragraph used the expression "elastic or non-elastic" ("Webbing . . . elastic or non-elastic, made of silk, or of which silk is the component material of chief value, 50 per cent. *ad valorem*"), and this shows that in assessing such goods, the substance which rendered them elastic—the India-rubber—was not to be considered, and that the governing or controlling material should be that which next to, or exclusive of, India-rubber is of chief value. Therefore webbing in which silk is of chief value exclusive of India rubber will come under the cotton paragraph, while webbing in which the material of chief value, exclusive of India-rubber, is silk, will be assessed under the silk paragraph. The India-rubber paragraph relates to merchandise not otherwise provided for.

Shattuck & Binger, dissatisfied with this decision, carried the case to the circuit court for the southern district of New York, where the decision of the board was reversed and the appellants' contention upheld. Judge Lacombe, in his opinion, gave this reason for his reversal: "If it appeared that it was not practicable to make cotton webbing elastic without the presence of India-rubber, I should be inclined to affirm the board's decision; but as there is no evidence to that effect, and as in fact there could not well be such evidence,—for we all know that it is a matter of weave as well as material that cotton webbing can be made elastic without the presence of any India rubber whatever in it,—I am of the opinion that the webbing clause in paragraph 354 cannot cover those articles of which India-rubber is the component material of chief value." In other words, Judge Lacombe thought that the Board's argument from the expression "elastic or non-elastic" would apply if elasticity necessarily implied the presence of India-rubber, but that, in view of the fact that there are other ways to make things elastic, the expression must be presumed to refer to those other ways, rather than to India-rubber, which has a special paragraph in the act and a special rate of duty.

The United States took the case to the circuit court of appeals, and Judge Lacombe's decision was sustained there on the ground that the board had insufficient facts to support their conclusion.

This disposed of the Shattuck & Binger case, which resulted in a victory for the importers.

Meantime, pending the appeal in this first case, the Board had under consideration another case, known as G. A. 2150, which was a protest of C. M. Van Baur against the collector's assessment on a consignment of cotton webbing. The facts found in the case were: (1) that the merchandise was commercially known as "cotton elastic webbing"; (2) that it was composed chiefly of cotton in respect of quantity, but that India-rubber was the component material of chief value; (3) that there is in the market



another class of merchandise similar in appearance and woven in the same manner and from the same materials, omitting India-rubber, known commercially as non-elastic cotton webbing; (4) that it is not practicable to make cotton webbing elastic without the presence of India-rubber. Manufacturers who had made all kinds of cotton elastic webbing both in Europe and America testified before the board that cotton webbing (the warp and woof threads of which always run at right angles to each other) cannot be made elastic without India-rubber as an element. Importers testified that they had never seen or heard of any elastic cotton webbing that did not contain India-rubber. It further appeared from the testimony that large dealers applied the term elastic cotton webbing to all cotton webbing having India-rubber, without regard to the relative value of the cotton and the India-rubber entering into the fabrication of the goods. Finally, the testimony of the manufacturers and importers clearly established the fact that knit goods (where the warp and woof threads do *not* run at right angles) *can* be elastic to some degree without any India-rubber, but that all efforts to make cotton webbing elastic without India-rubber had invariably failed.

In rendering the decision in the case on the above findings of fact, the board of general appraisers (General Appraiser Sharretts writing the opinion) said that in case 1223—Shattuck & Binger—the language of Judge Lacombe plainly suggested that the facts upon record before the court were not sufficiently clear or that they did not ap-

pear to support the conclusions of law reached by the board, but that in this case the exhaustive testimony established the fact which was lacking in the previous case—that cotton elastic webbing cannot be made without India-rubber—and hence the board felt constrained to affirm with greater particularity the ruling in case 1223.

The third and last case (2249) is a similar case to the first two, and grew out of an appeal against the same classification by the collector of cotton elastic webbing under paragraph 354. The appellants were M. J. Drucker, Solomon & Phillips, and C. M. Van Baur, and their contention was the same as that of the appellants in the previous cases. The board, relying on the findings of fact in the second case (2150) sustained the collector and affirmed its previous rulings.

The attorneys of the importers, it is understood, have acquiesced in the decision of the board, and will not take an appeal from it. It is therefore now decided that webbing, whether India-rubber is the component of chief value or not, is classed under the paragraph to which the material of chief value exclusive of, or next to, India-rubber properly belongs,—cotton or silk, as the case may be. Were an appeal taken to-day from the Board's decision the construction of Judge Lacombe and the circuit court of appeals would certainly be overruled, in view of the facts established in the second case as to the impracticability of making elastic webbing (silk or cotton) without India-rubber.

## EXPERT TESTIMONY IN THE ACID PATENT SUITS.

**I**N the infringement suit of the Chemical Rubber Co. vs. Goodyear's Metallic Rubber Shoe Co. and Emmett A. Saunders\* the following testimony was given for the defense:

THEODORE C. WEEKS, of Stoneham, Mass., gentleman, testified that he was buying and selling agent of the Nathaniel Hayward Co. in 1862. He recalled the purchase of sulphuric acid from the A. Cochrane Chemical Co. and from J. A. & W. Bird Co., both of Boston. He had seen the tank used in recovering scrap many times. He had seen it filled with cotton rubber rags, sulphuric acid, and water. He testified that this process destroyed the fiber in the rubber rags; that in the business he had used tons of waste-rubber with the fiber thus destroyed. Much of this rubber was used in the manufacture of army blankets. Later the blanket business was given up because it infringed the right of the Union India Rubber Co. under the Goodyear patents. In 1863 he offered William Judson, of New York, \$10,000 for an acid process for recovering rubber, but the bargain was never carried through. In response to questions he testified that he had seen the steam-pipe that entered the tank and the steam issuing from the boiling liquid. He remembered seeing in 1862

quantities of unvulcanized scraps treated with acid, and in 1870 and 1871 was shown vulcanized shoe-tops with fiber destroyed by acid.

BENJAMIN KOLLBERG, a workman for the Boston Rubber Shoe Co., testified that he worked for the Nathaniel Hayward Co. at the Haywardville factory in 1861. He was with the company five years and six months. He saw the recovering-tank but twice. Both of these times there were rubber scraps in it, acid and water, and the mass was steaming. He did not stop long in the cellar where the tank was because he was afraid of Daniel Hayward.

JEREMIAH KEATING worked for the Haywardville company in 1862. He ran the calender, and testified that the rubber that he used on blanket-work came from old rubber rags, old shoes, etc. The men who worked in the cellar where the reclaiming-plant was told him this. They told him that the rags were put through a vitriol process that burned off the fiber. When he first began running blankets Mr. Hayward brought him some stock from the cellar, told him to shut the rolls tight and run it through and see if there was any fiber in it. He found there was, so that stock was not used. The next day another lot was brought him which ran perfectly smooth, and after that there was no appearance of fiber in the stock. He left the company in 1863. A month after leaving he met Charles Henry Hayward, who told him the fiber was removed from the

\* In THE INDIA RUBBER WORLD of October 15, 1893, will be found the particulars of the points at issue in this suit. Portions of the testimony taken have appeared in the issues of January 15, February 15, March 15, and April 15.—THE EDITOR.

rags by an acid process. He returned to the Hayward company in 1865. In response to questions he testified that what he had run for blanket stock could not be cut up into coats, as he shellacked it in the calender-room. For this purpose he had a felt-covered roll set in a box, five feet from the calender over which the blanket stock ran, by which means it was covered with shellac.

HOBSON SWALLOW, Newton Lower Falls, Mass., testified that since 1862 he had been in the wool-extract business; that he was superintendent of Sullivan's Extract Works at Newton Lower Falls. He testified that prior to 1878 a part of their business had been to separate cotton and woolen rags. For this purpose they used a bath of sulphuric acid at 10° B. The rags were left in this bath thirty minutes, then removed to a strainer; they stood in the strainer twenty-four hours, and were then run through a hydro-extractor, after which they were placed in a dry-room and left there for ten hours, the temperature being 170° F.; they were then run through a paper-washer for two hours, and again run through a hydro extractor. The strength of the acid varied 3° or 4°, according to the condition of the stock. He testified that stronger acid than that they were in the habit of using would destroy the wool, and that they did not run the heat higher than 170° for fear of making the wool tender. In 1878 they used a sulphuric-acid bath for stripping colors from wool; the sulphuric acid was put in at 140° F. and brought to the boiling point; water was put in at 100° to 140° F.; a steam-pipe entered the tub as means of boiling the solution; the ingredients used in stripping were chrome, soda-ash, oxalic acid, alum, and sulphuric acid. This was raised to the boiling-point, and the woolen rags immersed in it.

N. CHAPMAN MITCHELL, patentee of certain letters patent on which the case was brought, testified that in 1879 he had put on the market recovered rubber made by the acid process. At that time the process was a preliminary "cooking" in caustic soda to remove the wool; the

soda was then washed out with water, and the rubber rags treated with sulphuric acid at 27° B. For this purpose they used a small lead-lined tub, into which was run a perforated lead pipe for conveying the steam. The liquid was boiled perhaps three and one half hours, when the fiber was destroyed. The contents of the tub were then removed, washed, squeezed through rolls, hung up to dry, and were later packed in barrels and sold. These, of course, were unvulcanized rags. At that time the business was owned by J. M. Stotesbury. In the soda process they found that many rags had already been partially operated upon by the soda. These were thrown into a corner, and were sprinkled with cold sulphuric acid to finish the process. Later the soda was given up and sulphuric acid alone used. That occurred between November, 1879, and January, 1880. After this time they did about 500 or 600 pounds a day by the acid process. He testified that Mr. Stotesbury, so he thought, bought the original process from C. J. McDermott. He found, however, that the goods produced by the McDermott process could not be sold. Mr. Mitchell therefore began experiments on his own account in his laboratory. Books that he consulted told him that acid would decompose India-rubber. His experiments, however, proved to the contrary. He started with sulphuric acid at 66° B. and then reduced it to 26° or 27° B., which is practically the strength that has been used ever since. He applied the acid process to the recovery of old shoes in the summer of 1880, although he had recovered small quantities as early as January of that year. At first they put in these goods in whole except when the pieces were too large, when they were chopped up with a hatchet. On cross-examination he testified that the manufacture of the recovered rubber under the five patents of the Chemical Rubber Co. was very large; that visitors had always been carefully excluded from his factory; that the acid treatment was not shown to the general workmen in his factory; and that the sulphuric acid was marked acetic acid.

### RIGOLE'S GUTTA-PERCHA PROCESS STILL ON THE MARKET.

**I**N the issue of THE INDIA RUBBER WORLD for September 15, 1893, Herr J. B. Breuer, of Bangkok, gave an account of a proposed joint-stock company for the exploitation, near Singapore, of the method for extracting Gutta-percha from the leaves and twigs of the tree yielding that gum, invented by the French chemist, Rigole. From details since received from the same source it would appear that the Singapore enterprise has not proved successful in the way of attracting investors; on the contrary, steps are being taken in London to secure funds for an undertaking, based upon Rigole's patent, in another quarter.

The Borneo Gutta-Percha Extraction Syndicate, Limited, invite subscriptions for an issue of 500 founder's mortgage £10 bonds, to be secured upon a concession of 60,000 acres of land in the state of Brunei, North Borneo, and redeemable in the shares of a company now forming to

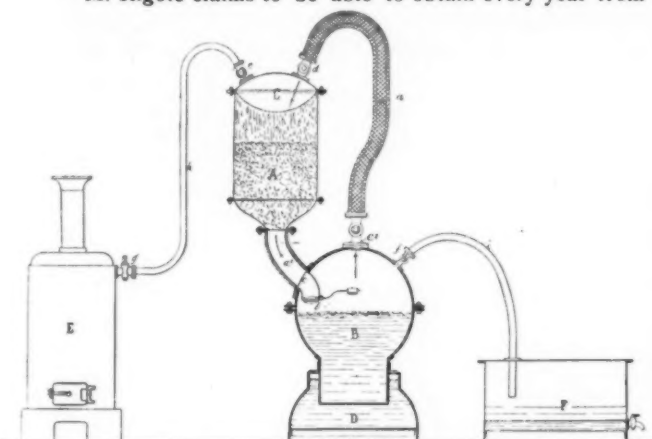
develop this territory and to establish a factory in Borneo for the extraction of Gutta-percha by the method patented by Dieudonné Rigole. The issue is also for the purpose of securing the whole of M. Rigole's patent rights throughout the world. An original concession from the sultan of Brunei, since acquired by Frederick D. Durnford, is the basis of this undertaking. The territory has lately been placed under the protection of the British government, and it is favorably situated with reference to communication by steamer with Singapore and Hongkong. The sole right is granted to open plantations for the natural products of the country—India-rubber, Gutta-percha, tobacco, sugar, tea, coffee, and spices—and to export India-rubber, Gutta-percha, and timber, with certain privileges with respect to export duties.

The land embraced within the concession, it is claimed, is extremely fertile, and is covered in large part with virgin

forests, in which abound the *Isonandra dichopsis* and the *Urceola elastica* (rubber-vine).

For the development of this large property, and particularly of the Gutta-percha and India rubber trees, a company is being formed, with £60,000 capital, to be called the Borneo Gutta-Percha Plantation and Produce Co., Limited, which is also to acquire from the syndicate here proposed the Rigole patent rights.

M. Rigole claims to be able to obtain every year from



RIGOLE PROCESS FOR EXTRACTING GUTTA-PERCHA.

the trees a yield of Gutta-percha twenty times greater than by the native method used hitherto, and without injuring the trees. The pruning of the trees, to obtain the leaves and twigs used by his process, according to M. Rigole, not only does no injury to their vitality, but stimulates and increases their productive power.

The invention of Rigole [English patent No. 4252, A. D. 1892] relates to a process and apparatus for extracting Gutta-percha from the leaves and twigs of *Isonandra dichopsis*, or other Gutta-percha-trees, by the

use of carbon-disulphid. The leaves or twigs, first pounded to uncover the cells containing the gum, are introduced into an exhausting vessel [A in the accompanying drawing]. The carbon-disulphid—employed as a solvent at the rate of 12 or 14 parts for the production of one part of Gutta-percha—is put into a boiler [B] and passes through a tube [a], as vapor, into a condenser [C] where it condenses, and then traverses the pounded leaves. The liquid from the disulphid then returns to the boiler by another tube [a<sup>1</sup>], the lower part of which is provided with an automatically operating flap [b] for permitting the passage of the gum into the boiler. Across the bore of the latter tube [a<sup>1</sup>] is placed a fine wire gauze [c] serving as a strainer. After the disulphid has collected a portion of gum and conducted it to the boiler, where the same is deposited, it escapes through the first tube [a] in order to condense again in the condenser [C] and resume its exhausting operation, continuing thus until all the gum contained in the leaves in the exhausting-vessel has been extracted. When the extraction is complete a valve [c<sup>1</sup>] is closed to prevent the further communication of the boiler with the parts of the apparatus, already described. Then by opening certain cocks a powerful jet of superheated steam is introduced [from a generator, E, in the drawing], which carries away the excess of carbon dioxide into a vessel provided for that purpose [F]. The extracted Gutta-percha remains in a pasty state in the boiler [B].

The process, it is stated, should not exceed twenty-five minutes. The temperature of the solvent is maintained at about 45° C. Other solvents might be used—as benzine and chloroform—but carbon-dioxide has been preferred on account of its comparative cheapness.

The London offices of the proposed new syndicate are at Copthall House, 48, Copthall avenue, E. C., where the secretary, Mr. Charles Farr, may be addressed.

## TAKING AN INTEREST IN EMPLOYÉS.

THE description of Dr. Traun's care for his workmen at his German factory, published recently in this journal, has attracted much attention among the rubber-manufacturers in this country. Opinions are about evenly divided as to the wisdom of attempting to adopt such plans for American workingmen. It is probable that our men are as a rule more self-reliant than are laborers in European countries, yet, in many places, the establishment of reading-rooms, improvement societies, etc., has been attended with success. Much depends upon the class of men employed, and fully as much upon the personality of the employer. In this, as in all problems looking toward help-giving, the best and wisest assistance that can be given is that which enables the employé to be better equipped toward self-help.

The Boston Woven Hose and Rubber Co. have at their Cambridge factory several plans that are working finely toward that end. One of these that is of absorbing interest just now to the help is the "emergency corps."

This is in charge of a physician who, twice a week, assembles his class of young men and women, gives them a lecture upon the best treatment for every-day accidents, and incidentally draws in many points of hygiene that are interesting and instructive. Nor is his duty there simply that of a lecturer. He teaches each one to bandage wounds, apply tourniquets,—in fact, he furnishes them with the exact knowledge concerning common-sense and simple means of lessening suffering and saving life. A curious accident emphasized the value of this corps only a short time ago. In the factory there is a thoroughly equipped fire-department. The men in it are employés of the company, and it is the boast of their foreman that they can throw up a ladder and run it down as quickly as any regular fire company in the city. Now it happened that while the emergency corps were receiving their lecture the fire company were drilling. Among the fire-ladders was a young man with only one eye, but except for this defect he was one of the most active and expert. The



ladder had been raised and was being thrown down, the men running back to their stations and catching it, when an accident occurred. The one-eyed man miscalculated the distance between himself and the falling ladder and received a severe blow on the forehead, the edge of the ladder almost cutting off the eyebrow. In an instant the emergency corps were on the scene. The man was taken inside, the blood staunching, a few stitches taken in the wound, and with the proper bandage in place he was all right again. The corps were just about to congratulate themselves upon the quickness and success of their treatment when a young man who had been an interested spectator but who cannot stand the sight of blood, fell at their feet in a faint. Instantly they had him in the proper

position, and, applying the right restoratives, had him soon on his feet.

"We don't often have such opportunities for illustration while the class is in session," said Superintendent Cowan as he related this, "but the way that they handled these cases, coming when least expected, proved to me that the corps was a success. It costs us something, to be sure, to maintain this class, but I believe that it is an economy. At all events, it shows the help that we are interested to keep them from injury. Let the employes get the idea that the proprietors care nothing for them except what they can get out of them, and if an accident occurs it is likely to be followed by a lawsuit, from which justly or unjustly, the proprietor is the sufferer."

## RUBBER GOODS IN THE WILSON TARIFF BILL.

*A Comparison with the Existing Rate of Duties.*

Paragraph.	ARTICLES.	Importations, Fiscal Year, June 30, 1893.				Duties Estimated Under Wilson Bill.	Rates of Duty Under—		Average ad valorem Under—	
		Quantities.	Value.	Duties.	Unit of Value.		Present Law.	Wilson Bill.	Present Law.	Wilson Bill.
	SCHEDULE A—CHEMICALS.									
59	Whiting and Paris white, dry .....	281,618	\$41,538.00	\$8,443.65	.15	\$8,307.60	3c. per lb.	20%	20.33%	20%
63	Litharge .....	75,394	2,383.00	2,261.82	.032	1,130.91	3c. per lb.	1 1/2 c. per lb.	94.91%	47.45%
88	Sulphur .....	128.78	4,493.00	1,287.83	34.89	898.60	\$10 per ton	20%	28.66%	20%
	SCHEDULE I—COTTON MANUFACTURES.									
349	Articles of wearing apparel and ready-made clothing, of which India-rubber is a component material. ....	1,986.75	2,519.00	2,252.88	1.27	1,007.50	50c. per lb. and 50%	40%	89.44%	40%
354	Gimps, galloons, webbing, goring, suspenders and braces, elastic or non-elastic .....		421,353.97	168,541.59	....	147,473.88	40%	35%	40%	35%
	SCHEDULE K—WOOLEN GOODS.									
398	Webbing, gorings, suspenders, braces, etc., elastic or non-elastic .....	173,357.27	307,531.66	288,533.38	1.77	107,636.08	60c. per lb. and 60%	35%	93.82%	35%
	SCHEDULE L—SILK AND SILK GOODS.									
412	Webbing, gorings, suspenders, braces, etc., elastic or non-elastic .....		723,022.71	361,511.35	....	289,209.08	50%	40%	50%	40%
413	Knit goods, composed in part of India-rubber .....	1,470	549.00	447.00	.37	247.05	8c. per oz and 60%	45%	81.42%	45%
	Other ready-made clothing, composed in part of India-rubber .....	2,968	1,334.82	1,038.33	.45	600.67	8c. per oz. and 60%	45%	77.79%	45%
	SCHEDULE N—SUNDRIES.									
460	Miscellaneous manufactures of India-rubber .....		265,155.10	79,546.53	....	66,538.77	30%	25%	30%	25%
461	Manufactures of hard rubber .....		58,680.35	20,538.14	....	17,604.10	35%	30%	35%	30%
	Manufactures of Gutta-percha .....		81,288.10	28,450.84	....	24,386.43	35%	30%	35%	30%

### EXTRACTS FROM THE WILSON BILL.

THE paragraphs which follow are copied from the Wilson tariff bill in the form in which it reached the stage of debate in the United States senate. Under each paragraph, in smaller type, is given the corresponding rate under the present law, and the number of the paragraph in which the rate may be found.

#### SCHEDULE I—COTTON GOODS.

263. Cords, braids, boot-, shoe-, and corset-lacings, tape, gimps, galloons, webbing, goring, suspenders, and braces, made of cotton or other vegetable fiber, and whether composed in

part of India-rubber, or otherwise, and cotton damask, in the piece or otherwise, 35 per cent. *ad valorem*.

[McKinley bill—Paragraph 354: 40 per cent.]

264. All manufactures of cotton not specially provided for in this act, including cloth having India-rubber as a component material, 35 per cent. *ad valorem*.

[McKinley bill—Par. 355: 40 per cent.]

#### SCHEDULE K—WOOLEN GOODS.

281. On woolen or worsted cloths, shawls, knit fabrics, and all fabrics made on knitting-machines or frames, and all manufactures of every description made wholly or in part of wool, worsted, the hair of the camel, goat, alpaca, or other animals,

and any of the above having India-rubber as a component material, not specially provided for in this act, 35 per cent. *ad valorem*.

[McKinley bill—Par. 392: Mixed duties.]

284. On clothing, ready-made, and articles of wearing apparel of every description, made up or manufactured wholly or in part not specially provided for in this act, felts not woven, and not specially provided for in this act, and plushes and other pile fabrics, and imitations of fur; all the foregoing, composed wholly or in part of wool, worsted, the hair of the camel, goat, alpaca, or other animals, including those having India rubber as a component material, 40 per cent. *ad valorem*.

[McKinley bill—Par. 396: mixed duties.]

286. On webbings, gorings, suspenders, braces, beltings, bindings, braids, galloons, fringes, gimps, cords, cords and tassels, dress trimmings, laces and embroideries, head-nets, buttons, or barrel buttons, or buttons of other forms, for tassels or ornaments; any of the foregoing which are elastic or non-elastic, made of wool, worsted, the hair of the camel, goat, alpaca, or other animals, or of which wool, worsted, the hair of the camel, goat, alpaca or other animals, is a component material, 35 per cent. *ad valorem*.

[McKinley bill—Par. 398: mixed duties.]

#### SCHEDULE L—SILK GOODS.

300. Webbings, gorings, suspenders, braces, beltings, bindings, braids, galloons, fringes, cords and tassels; any of the foregoing which are elastic or non-elastic, buttons, and ornaments made of silk, or of which silk is the component material of chief value, 40 per cent. *ad valorem*.

[McKinley bill—Par. 412: 50 per cent.]

302. All manufactures of silk, or of which silk is the component material of chief value, including those having India-rubber as a component material not specially provided for in this act, 45 per cent. *ad valorem*.

[McKinley bill—Par. 414: 50 per cent.]

#### SCHEDULE N—MISCELLANEOUS.

352. Manufactures of bone, chip, grass, horn, India-rubber, palm-leaf, straw, weeds, or whalebone, or of which these substances or either of them, is the component material of chief value, not specially provided for in this act, 25 per cent. *ad valorem*.

[McKinley bill—Par. 460: 30 per cent.]

353. Manufactures of leather, fur, Gutta-percha, vulcanized India-rubber, known as hard rubber, human hair, papier-maché, plaster of Paris, indurated fiber wares and other manufactures composed of wood or other pulp, or of which these substances or either of them is the component material of chief value; all of the above not specially provided for in this act, 30 per cent. *ad valorem*.

[McKinley bill—Par. 461: 35 per cent.]

#### TWENTY-FOUR YEARS A RUBBER-MAN.

JOHN J. VOORHEES was born in New Utrecht, Long Island, in 1848. He left school at the age of sixteen years and went to work in a country store. After a short time he went to Brooklyn, where he worked as a clerk until he was twenty-two years old. In 1870 he secured a position as book-keeper for the New Jersey Car Spring and Rubber Co., which was then a very small concern. In 1873 he had grown so in favor with the company that he was made their secretary, which position he held until 1887, when he was elected treasurer. The president, Mr. J. J. Fields, gave up the active management of the company in 1883, since which time Mr. Voorhees has had the general direction of the business. Under Mr. Voorhees's

energetic management the plant and volume of business, as well as its earning capacity, have increased very rapidly, and particularly is this true of the past ten years. From time to time new lines of goods have been added until almost everything in the line of mechanical rubber goods are manufactured by them. The factory plant in Jersey City has been increased in size until hardly a semblance of the original remains; the old machinery has been replaced by the most modern and improved patterns, and every labor-saving device consistent with good work has been added. This has been due largely to the push and business sagacity of Mr. Voorhees. He is a very hard worker and to-day does all the important correspondence, purchases all the supplies, directs the traveling men, and meets all the important customers. Outside of the rubber business Mr. Voorhees has held important positions. For instance, he was for six years a member of the board of education of Jersey City, and was each year elected president of that body without opposition. He is now president of the board of trade, is director in



JOHN J. VOORHEES.

several local business interests, such as gas companies, insurance companies children's homes, etc. The 14th of April completed the twenty-fourth year of Mr. Voorhees's connection with the New Jersey Car Spring and Rubber Co. Personally he is one of the most delightful men to meet and, in spite of the immense amount of hard work that he does and the pressure of many cares, he always has a pleasant word for his friends and can appreciate a good story.

THE Société d'Encouragement pour l'Industrie Nationale, Paris, is offering a prize of 600 francs (=\$120) to any one who will invent or discover a substance which will completely replace Gutta-percha in one at least of its principal applications.

## NEW GOODS AND SPECIALTIES.

**T**HE Norka razor-case is a rubber case with pneumatic compartments for holding six razors. It may be laid on the dresser, or hung in any position as preferred, the compartments being cushioned, with a ribbon interlaced and over them. Each razor is held securely in the soft rubber pocket provided for it. The shape of the case permits of its being rolled up and tied when not in use. It is easily cleaned with a moist sponge and will last a lifetime. This razor-case gives the highest satisfaction wherever used. It is sent by mail on receipt of 75 cents. The trade is supplied by the Norka Co., lock box No. 58, Akron, Ohio.

## MORGAN &amp; WRIGHT FLOOR-PUMP.

THE Morgan & Wright floor-pump, on account of its low price and good qualities, has become very popular, especially with those who do not want to pay the price of from \$3 to \$5 usually asked for such pumps. It is strong and well made, of fine nickel finish, a few strokes sufficing to inflate a tire. Its length is 17 inches; diameter,  $\frac{7}{8}$  inches; rubber connection, 18

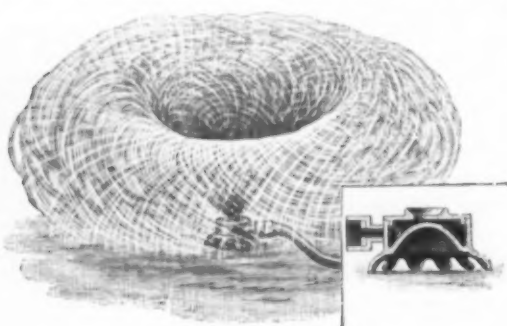


MORGAN &amp; WRIGHT FLOOR-PUMP.

inches. The nipple for attaching it to the valve is so made that it can be screwed into the valve without twisting the rubber. The dotted line in the illustration shows the foot of the pump folded up. This pump is furnished with both inlet and outlet check-valve, folding foot-piece, universal tire connection, solid metal handle, and the price is \$1.50, with a liberal discount to the trade.

## THE "DELUGE" SPRINKLER.

THERE are so many types of lawn- and garden-sprinklers today that it is hard indeed to select the best. The accompanying illustration, however, shows one that is rapidly outselling many of its competitors. The manufacturers state that the reason for its popularity is that it is actually the largest, best, and lowest-priced sprinkler on the market. It is extremely



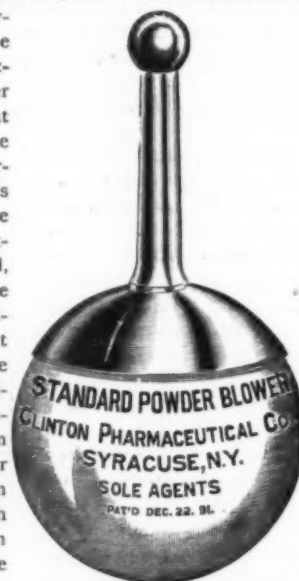
THE "DELUGE" SPRINKLER.

simple in construction, and never gets out of working order. It is made so that the water revolves inside the sprinkler, giving it a spiral motion as it comes out, thus throwing it over a large

area. Manufactured by the Boston Woven Hose and Rubber Co., Boston, Mass.

## THE STANDARD POWDER-BLOWER.

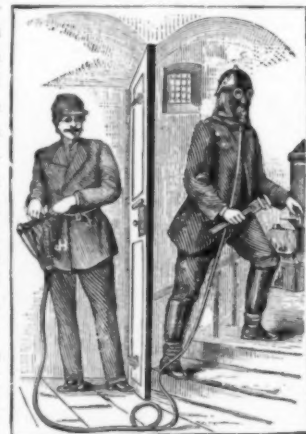
FOR a great many troubles healing powders have been found to be more effective than ointments, and it is for medicines of this kind the Standard powder-blower is adapted. The reasons given by the manufacturers that sprays are better than ointments, are first, that sprays do not enter all the cavities, as they cannot interchange with the air that fills them; second, that they are too dilute to be effectual except as a local wash; third, that they do not contain one of the most prominent acting principles of disinfectant and alterative remedies in the Iodine, and the healing coal-tar derivatives such for instance as are combined in Iatrol. The powder-blower here illustrated contains an inner sack of linen, which prevents the powder from coming in contact with the rubber bulb. Aside from that it is easily understood from the illustration. Manufactured by the Clinton Pharmaceutical Co., No. 204 West Water street, Syracuse, N. Y.



THE STANDARD POWDER-BLOWER.

## A RUBBER SAFETY-RESPIRATOR.

THE respirator illustrated herewith is designed for the use of miners, employes in gas- and chemical-works, tunnel-workers, etc., but may be employed to great advantage in all places where contact is had with gas and noxious vapors, and entirely obviates the danger of suffocation and of being overcome by gas. It will be found a valuable addition also to a fireman's outfit, as it is claimed to be of great value in overheated rooms where work can be done without inconvenience or injury. The main apparatus consists of (1) a helmet with mask; (2) spiral hose; and (3) double-acting bellows. The helmet rests upon the head by means of the leather lining, fitted closely around the neck by a strap. The hose, which is to be coupled to the helmet before the apparatus is put on, serves to furnish fresh air, while communication



A RUBBER SAFETY-RESPIRATOR.

may be obtained by opening the mouthpiece. Manufactured by Arnemann & Torchiani, Nos. 43-45 Center street, New York.



## THE "VICTOR" RUBBER TROUSER-GUARD.

SOMETHING that every wheelman will appreciate is the rubber trouser-guard shown in the accompanying illustration. It is simply a strip made of pure rubber without any cloth insertion, and fitted with means for attaching the ends which are as simple as the ordinary hook and eye. Its use to wheelmen is obvious. Further than this, to anyone who wears rubber boots it will be found an advantage for the reason that the trouser-leg can be folded over and held in place without the wrinkling that usually follows the wearing of rubber boots. Manufactured by the Overman Wheel Co., Chippewa Falls, Mass.



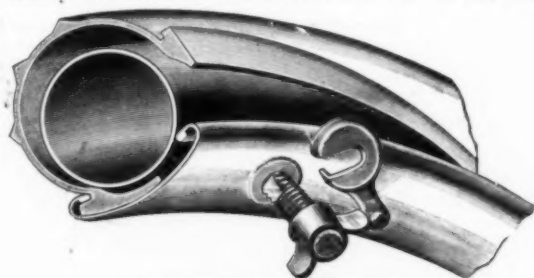
RUBBER TROUSER-GUARD.

## IMPROVED METHOD FOR INSERTING GORE INTO CONGRESS SHOES.

SINCE the congress shoe has become so popular, daily thought has been put on the making of the gore in order to render it as lasting as possible and to overcome every objection that has ever been raised against it. One of the serious objections in the past has been that the oil in the leather to which it is stitched injured the rubber threads and caused it to give way. This has been overcome by Henry Newcomb's patent, by which the gore is inserted into the oily leather in such a manner that the oil has no chance to get at the rubber threads. The idea is extremely simple. An independent line of stitches is run on the gore itself sufficiently removed from the leather, and this line of stitches passes only through the folded edge of the lining which is extended at the back of the gore to receive it. The stitches made on the gore are a guard line, thus making the gore effective for service after the part which comes in contact with the oily leather has been destroyed by the oil. It has been proved that gore inserted by this method lasts much longer than the old way. The Bridgeport Elastic Web Co., who are half-owners of the patent, will give free license to their customers on application to use the Newcomb patent.

## THE GORMULLY &amp; JEFFERY TIRE.

THE illustration herewith shows the form of construction of the Gormully & Jeffery tire, including the inner tube, the outer case, and the method of attachment to the rim. It also shows



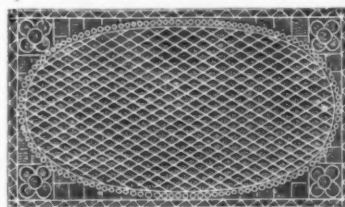
THE GORMULLY &amp; JEFFERY TIRE.

the valve, which is attached to the inner tube, and the latch which keeps the valve-stem in position. The success of the Gormully & Jeffery Manufacturing Co. in introducing their tire is shown by the fact that they have found it necessary to open

a large establishment at Coventry, England, to supply promptly and economically their foreign orders. This certainly marks a great change in the American bicycle-trade from the days when it was deemed necessary for Americans to cross the Atlantic to secure first-class wheels and particularly to secure pneumatic tires of a high grade.

## DIAMOND DOOR-MATS.

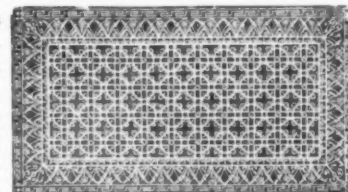
THE accompanying illustrations show the new patterns offered by the Gutta-Percha and Rubber Manufacturing Co. (New York) in diamond mats.



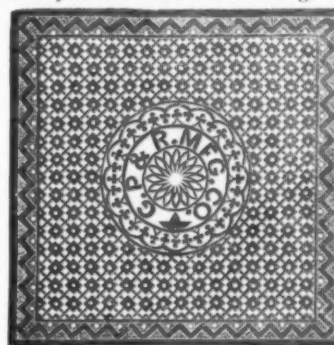
DIAMOND DOOR-MAT.

It is claimed that in beauty of finish and artistic design they excel any mats on the market. The designs are specially adapted to withstand the usual wear and tear to which these mats are subjected. Good

material and careful workmanship are added. The first cut is that of diamond door-mat No. 7. This mat is specially adapted for outside service. The second cut is a figured door-mat, adapted for use in cars, vestibules, or within doors. Though they are only one-fourth of an inch thick (so as not to interfere with the opening and shutting of doors) they will outwear three ordinary cocoa mats, besides being cleaner and far more sightly



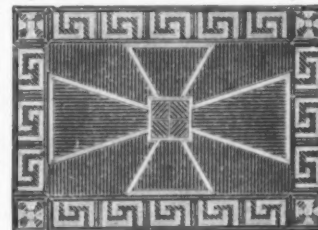
FIGURED DOOR-MAT.



A PERFORATED MAT.

and attractive. They are designed for all places subjected to heavy wear. The third cut shows a perforated mat particularly well adapted for street-car use and all railway lines. It is either made perforated through or with a solid back. The solid back is more expensive. The fourth design shown

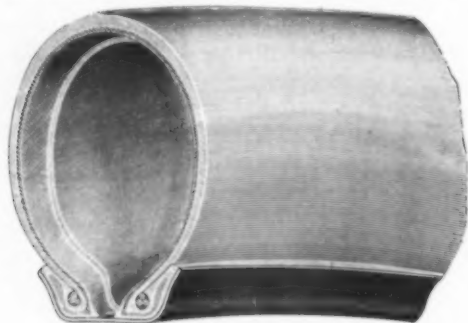
is a Maltese-cross brand corrugated rubber mat. It is adapted for hallways and other places where constant wear and noise are the objections to be overcome. Large quantities of this material are used for stair-treads. There are double-surface reversible mats and single-surface mats. The mats are made to any desired shape or dimensions, and lettered to suit. The reversible mats can be frequently turned, and lasts twice as long as the single-surface mats. Manufactured by the Gutta Percha and Rubber Manufacturing Co., No. 35 Warren street, New York.



MALTESE-CROSS BRAND.

### "KEYSTONE" DETACHABLE PNEUMATIC TIRE.

THIS tire is called by the manufacturers the simplest detachable tire ever made. It is attached to the rim by means of a small cord or string in the following manner: After the inner tube has been slightly inflated the shoe is placed in the rim and the cord is then wound in each pocket, passing around three times and drawn tightly as it is wound. The ends of the cord



"KEYSTONE" DETACHABLE PNEUMATIC TIRE.

are fastened by winding them three times around each other drawing tight, and placing in the pocket about eighteen inches of each end beyond the point of twisting. The tire is then inflated for riding. Manufactured by the Erie Rubber Co., Erie Pa.

### THE "MELBA" INVERNESS.

A THREE-CAPE Inverness that shows exceedingly well in the illustration, and is finding favor this season, is known as the "Melba." It is of course sleeveless, made single or double texture, and the capes are lined with silk if desired. These



THE "MELBA" INVERNESS.

capas are made so that they can be worn without the rest of the garment, having all the appearance of a fashionable wrap. The feature of this garment is the new-style turn-over collar, which is exceedingly natty in effect. The capes are made 8, 16, and 26 inches. The garment is made in any one of the hundreds of styles that the swatches of the manufacturers contain. Manufactured by the Norfolk Rubber Co., Bedford street, Boston.

### THE DOUBLE-BREASTED "CHESTERFIELD."

THE garment under the above name is said to be the favorite in London and England generally, among the various new styles of mackintoshes, and it is expected to meet with great favor on this side. It is manufactured by Charles Macintosh & Co., of Manchester, the original patentees of vulcanized India-rubber. The object in making it has been to give it as little

as possible the appearance of an ordinary waterproof garment and to make it undistinguishable from a stylish overcoat. The waterproof garments of this concern are vulcanized by dry heat under a new process which is patented in Great Britain and foreign countries, and they are declared to be absolutely free from odor. They never decompose or become hard, and stand any climate. No perfume or any other device is applied to get rid of the odor. They are claimed to remain soft and pliable during even an arctic winter. There are several grades of the Chesterfield in the market. The lining is of wool, and in some garments is loose, so as to make the mackintosh differ little from an overcoat. The seams are both sewed and cemented, and they never come apart. T. W. Stemmler & Co., No. 36 East Fourteenth street, New York, are the sole agents of Charles Macintosh & Co., Limited, the manufacturers.

### THE CHINNOCK PNEUMATIC TIRE CO.

THE Chinnock Pneumatic Tire Co. have been incorporated at Madison, N. J., with offices at Nos. 9-11 West Broadway, New York, with \$250,000 capital, for the manufacture and sale



of the Chinnock "Special" bicycle and the Chinnock pneumatic clincher tire, of which the new company own the American and foreign patents. The Chinnock tire, intended both for bicycles and for sulkies, is of the inner-tube variety.

The points especially claimed for the tire are that it cannot leave the rim even when deflated by punctures, this being accomplished by the four flange clamps which, when screwed down, hold the tire on the rim under all conditions, and the prevention of creeping, the section which is cut from the shoe and which fits nicely around the flange stop of the rim being the means of such prevention. The soft rubber head running around the outer edge of the cover, and fitting in the flange of the rim, is used for the packing of the joint between the shoe and the rim, which is claimed to make it mud- and water-proof. There is no stretching of the shoe, as the rubber bead takes all the strain from the fabric in the shoe, and is easy to attach and detach from the rim. This is said to be the only pneumatic tire that is held on the rim without air-pressure, but by mechanical fastenings simply.

The president of the company, George H. Chinnock, is well-known as an inventor, having patented a great many articles. He is known particularly as the inventor of the rubber stamp. The vice-president and general-manager, Edward H. Alcott, has long been the selling-agent of the Eastern Rubber Manufacturing Co. and the Empire Rubber Co., of Trenton, N. J., with which he retains his connections. The secretary and treasurer of the new company, Abram Lent Smith, has been engaged in the real-estate trade in Brooklyn, N. Y., and this is his first connection with the rubber-manufacturing trade.



## ANNUAL MEETING OF THE UNITED STATES RUBBER CO.

THE second annual meeting of the stockholders of the United States Rubber Co. was held at noon on Tuesday, April 17, at the office of the company at New Brunswick, N. J. There were present sixty or more stockholders, representing the several companies embraced within the corporation. The meeting was presided over by Joseph Banigan, president of the United States Rubber Co., and of the Woonsocket Rubber Co.

President Banigan made a report which consisted of a résumé of the business of the United States Rubber Co., showing that, notwithstanding the general paralysis of business, together with a mild winter, the sales had been very satisfactory; that by the instrumentality of the Manufacturers' Club organized among factory superintendents a free interchange of ideas and information had been arrived at that had largely contributed to the improvements in manufacture; that new machinery of an enlarged scope had been put into several of the factories; that engines had been speeded up to their fullest capacity; and that every machine had been put to its completest and best use. The United States factory proper at New Brunswick had been enlarged, and preparations made for a considerable growth of the business. Reference was also made to the use of wider cloths as contributing to economy. Mr. Banigan stated that he was thus full and free in his report as he wanted the other stockholders to be as fully informed as possible as to the business of the company. The report was received with every appearance of satisfaction and was adopted with much enthusiasm.

The president's report was followed by that of the treasurer, which is given below, after which there was an election of directors for the ensuing year, at which 289,291 shares out of a total of 395,665 were represented. At the conclusion of business a sumptuous lunch was served in the packing-room of the factory.

## THE DIRECTORY.

THE following list shows at a glance both the new directory and that of last year. The new names are printed in italics, while the retiring directors are indicated by lines drawn through their names:

CHARLES A. COFFIN.	GEORGE A. LEWIS.
SAMUEL P. COLT.	EDWIN A. LEWIS.
JOSEPH BANIGAN.	MAHLON C. MARTIN.
ROBERT D. EVANS.	FREDERICK M. SHEPARD.
JAMES B. FORD.	<del>RICHARD C. SIBLEY.</del>
CHARLES R. FLINT.	<i>Charles H. Dalton.</i>
J. HOWARD FORD.	<del>J. EDWARD SIMMONS.</del>
ROBERT M. GALLOWAY.	<i>George Watkinson.</i>
WILLIAM H. HILL.	WILLIAM L. TRENHOLM.
HENRY L. HOTCHKISS.	<del>JOHN P. TOWNSEND.</del>
H. B. HOLLINS.	<i>George M. Allerton.</i>
GEORGE H. HOOD.	WALTER S. BALLOU.
CHARLES L. JOHNSON.	JOHN J. BANIGAN.
JAMES P. LANGDON.	SAMUEL N. WILLIAMS.

The rubber companies represented in the directory are:

American Rubber Co.=Robert D. Evans.  
 Boston Rubber Co.=George H. Hood.  
 L. Candee & Co.=Henry L. Hotchkiss, Charles L. Johnson.  
 Colchester Rubber Co.=George Watkinson.  
 Goodyear Rubber Co.=Frederick M. Shepard.  
 Goodyear's Metallic Rubber Shoe Co.=George A. Lewis, Edwin A. Lewis.  
 Lycoming Rubber Co.=Samuel N. Williams.  
 Meyer Rubber Co.=James B. Ford, J. Howard Ford.  
 National India Rubber Co.=Samuel P. Colt.

New Brunswick Rubber Co.=James P. Langdon.  
 New Jersey Rubber Shoe Co.=M. C. Martin.  
 Woonsocket Rubber Co.=Joseph Banigan, Walter S. Ballou, John J. Banigan.

Director Coffin is president of the General Electric Co.; Mr. Flint is treasurer of the New York Commercial Co.; Messrs. Galloway, Hollins, and Trenholm are bankers in New York; Messrs. Dalton and Hill are Boston manufacturers; Mr. Allerton, of Waterbury, Conn., was at one time secretary of the Good-year's Rubber Manufacturing Co., of which his father, the late G. M. Allerton, was long the president, but he is not at present connected with that company.

The election of officers took place at a meeting of the directors held on April 18 at the offices of the United States Rubber Co., in New York. The list of officers is the same as last year, except that some additions have been made to the list, which are indicated by italics:

JOSEPH BANIGAN, President and general manager.  
 ROBERT D. EVANS, First vice-president.  
 JAMES B. FORD, Second vice-president.  
*George Watkinson*, Assistant general manager.  
 CHARLES L. JOHNSON, Secretary.  
 CHARLES R. FLINT, Treasurer.  
*Mahlon C. Martin*, Assistant treasurer.

## FINANCIAL STATEMENT.

THE report of Treasurer Charles R. Flint contained the following financial statement of the United States Rubber Co. on April 1, 1894:

ASSETS.	
Cash on hand and in bank .....	\$ 103,956.29
Accounts and bills receivable ..	576,095.10
Merchandise (raw material and manufactured goods) .....	1,156,498.97
Furniture and fixtures, lasts, and new buildings at New Brunswick ..	56,978.06
Investments in stocks and bonds of other companies .....	38,687,922.45
	<u>\$40,581,450.87</u>
LIABILITIES.	
Bills payable .....	\$ 367,218.32
Accounts payable .....	92,536.41
Preferred stock .....	10,400,500.00
Common stock .....	20,166,000.00
Due companies in which the United States Rubber Co. is interested, for merchandise .....	349,527.85
	<u>\$40,375,782.58</u>
Surplus .....	\$ 205,668.29
Surplus accumulated by Lawrence Felting Works over amount drawn on account of dividend .....	41,255.00
	<u>\$ 246,923.29</u>

In addition to surplus above shown our investments in other manufacturing companies have earned during the year sufficient to pay the 8 per cent. dividend on the preferred stock of \$10,400,500, and leave in the treasuries of the companies a substantial surplus.

CHARLES R. FLINT.

With a view to explaining the above report the Boston *News Bureau* quotes "an insider in rubber affairs" substantially as follows:

The United States Rubber Co. own two plants: that of the New Jersey Rubber Shoe Co., at New Brunswick, N. J., and that of the Lawrence Felting Works, at Millville, Mass. The other concerns—the American Rubber Co., the Woonsocket,



etc.—are still operated as independent companies, but the United States Rubber Co. own their entire capital stock, with the exception of 10 shares outstanding of one company and a majority interest in the Goodyear's India Rubber Glove Manufacturing Co. The stock of all these various companies is in the vaults of the United States Rubber Co., stock in the latter having been taken by the companies in exchange. Each company, while acting independently, sets aside each year its proper share of earnings to help pay dividends on the stock of the United States Rubber Co. It will thus be seen that Treasurer Flint has issued a complete financial report of the United States Rubber Co., though it deals with the operations of only two companies. The item of \$38,687,922.45 of "investments" represents the stock of the various companies under control of the large corporation. [Deducting this amount from the total issue of stock up to date would show a capital account of \$878,577.55 for the New Jersey Rubber Shoe Co. and the Lawrence Felting Works.—THE EDITOR.] It was not thought wise, under prevailing business conditions, to give a full and complete report of the operations of all the companies; besides, this would not have been possible, since the returns from the various companies have not yet been made up, owing to the rebates under

which large stocks of goods were sold not having been settled yet. As announced in the treasurer's report, the United States Rubber Co. earned during the year 8 per cent. on their preferred stock [which would amount to \$1,552,040], but another fact, which was not announced, was that 7 per cent. was earned on the common stock [or \$1,411,620]. As it is the policy of the company to act on conservative lines and to build up a large cash surplus, this 7-per-cent. dividend will be retained to swell the surplus accounts of the various companies forming the United States Rubber Co.

From the source which inspired the above statement comes also the following expression of opinion concerning the year's business: "Earnings of over 7 per cent. on United States Rubber Co. common and 8 per cent. on preferred stock is a splendid showing when it is considered that there was no snow to speak of between December 20 and February 1, right in the heart of winter, and when it did come later in February it was so late people went without rubber goods; also workmen out of employment, who generally use a large amount of boots did not have occasion to buy them this year, and above all it must be considered that this year has been the hardest business year since 1873, if not longer."

## BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

**A**MONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

### TIRES.

No. 516,080.—Bicycle-Tire. George W. Washburn, Boston, Mass.

An inner air tube of a pneumatic tire for wheels, provided with an inward longitudinal thick partition, and a thinner flexible partition intermediate, the thick partition and outward inflated air-tube, and adapted to be inflated into contact with the surface of the air tube.

No. 516,091.—Device for Repairing Pneumatic Tires. Pardon W. Tillinghast, Providence, R. I., assignor to the Security Pneumatic Tire Co., Jersey City, N. J.

The device for repairing pneumatic tires, consisting of the flexible disk, the flexible stem, and the uncured rubber patch of greater diameter than the disk.

No. 516,790.—Wheel-Tire. Charles F. Lavender, Toronto, Canada, assignor of one-half to Thomas Fane, same place.

The combination with the tire consisting of an inner inflatable tube and an open-sided cover or envelope, of a wheel-rim composed of an inner beveled ring to which the spokes are secured, and an outer beveled ring or clamping-band which is secured to one of the marginal portions of the envelope and adapted to clamp the intervening marginal portions of the tire cover against the inner ring of the rim.

No. 516,830.—Pneumatic Tire. Joseph G. Moomy, Erie, Pa.

In a pneumatic tire, the combination with the rim of the wheel having an annular rib thereon, of the tire having an outwardly turned flap with a binder-seat thereon, at a point in the transverse circumference of the tire, where the direction of the arc is substantially a right angle to the plane of the binder annulus and having a groove on the under side thereof, outside the binder that fits over the annular rib on the rim, and a binder on said flap on said seat.

No. 517,033.—Protector for Pneumatic Tires. Alfred S. Davy, Sheffield, England.

The combination, with a pneumatic tire, of a ribbon of metal

curved transversely and longitudinally and having transverse corrugations of gradually diminishing depth from the edges inward and applied to the inner surface of, or embedded in, the thickness of the tire.

No. 517,312.—Pneumatic Tire. Rudolph E. Tollner and Charles N. Potter, Brooklyn, N. Y.

In a double pneumatic tire, the small nozzle on the inner tire adapted to match within the larger nozzle on the outer tire, allowing the inner tire to be of no effect under ordinary conditions.

No. 517,414.—Pneumatic Tire. Charles L. Ames, Ridgeland, Ill.

In a pneumatic tire, a tube which is open along the seat and thickened at each side of the opening and has the abutting edges at the opening formed with plane faces and has slots for the reception of binders.

No. 517,415.—Tire for Wheels. Charles L. Ames, Ridgeland, Ill.

The combination with the tube open along a line extending along the middle of the seat and having lateral slots, of a rim and binders pivoted to the rim by one end and having the other end provided with a relatively straight edge at right angles to the length of the fasteners and adapted to extend into said lateral slots.

No. 517,417.—Tire. Cyrus Kerr, Lake Side, Ill.

The combination with the tube, open along a line extending along the middle of the seat, and having at each side of the opening a series of holes, of binders, placed through the opening by extending into and out of the tube, and a rim.

No. 517,418.—Tire. Cyrus Kerr, Lake Side, Ill.

The combination with a tube open along a line extending along the middle of the seat and having tongues, formed from the wall of the tube, and having their bases toward the tube, of binders extending around the tire at each side of and parallel to the opening and lying outside of the portions of the wall of the tube between the tongues and lying beneath the tongues, and a rim.

No. 517,584.—Pneumatic Tire. George M. Monro, Jr., Pittsburgh, Pa.

In a pneumatic tire for bicycles the combination of two tubes, the outer one being subdivided into series of non-communicable compartments; and the inner ones adapted to inclose a

number of small feed-tubes corresponding in number with air-compartments contained in the outer tube; and a valve connected with the air-compartments respectively by the feed-tubes.

#### DRUGGISTS' SUNDRIES.

No. 517,384.—Inkstand. Charles E. Jewell, Toronto, Canada, assignor of one-half to Major R. Jewell, Rochester, N. Y.

As a new article of manufacture, the attachment for an ink-bottle consisting of a hollow elastic stopper with a central yielding diaphragm, and the funnel provided with a dip-tube passing tightly through and sustained wholly by the diaphragm; whereby the attachment is adapted to hold itself in place on and tightly seal the mouth of the bottle, and to feed ink to the funnel when the latter is depressed.

No. 517,958.—Bottle-Stopper. Carl F. Möller, Berlin, Germany.

The India-rubber cover, with its internal ring or ridge, combined with the leaves and piston, the cover entirely inclosing the leaves and piston.

No. 518,161.—Device for Administering Medicines. William B. Pollard, Hot Springs, Ark.

A device for administering medicine composed of a receiver formed with an extension having a broadened end or mouth-piece, a passage through the extension and opening to one side of the broadened end or mouth-piece, and an elastic bulb connected with the receiver.

#### BOOTS AND SHOES.

No. 518,060.—Sole. William A. Ford, Indianapolis, Ind.

The combination, with the insole of a boot or shoe, of an outsole consisting of two layers of rubber with an intermediate layer of canvas or equivalent tenacious material, the outer layer of rubber being provided with perforations extending completely therethrough, and nails let into the perforations and perforating the canvas; the inner layer of rubber, and the insole and securing the same together, the heads of the nails abutting directly against the canvas.

#### MECHANICAL GOODS:

No. 516,874.—Packing. John Murphy, Brooklyn, N. Y.

The process of making coiled packing which consists in uniting sheets of fibrous material by rubber reinforced by transverse stays, then enveloping the same on each side by the sheet of rubber, then partially vulcanizing the same, then cutting the same up into strips, then coiling each of the strips and then completing the vulcanization.

#### INSULATED WIRE.

No. 517,452.—Insulating Compound. Adolf Gentzsch, Vienna, Austria-Hungary.

An insulating compound consisting of the extract from fossil resins as ozocerite, asphalt, and amber, in the proportions set forth, from which the gas, vapors, and oils have been removed.

#### MISCELLANEOUS.

No. 516,866.—Anti-rooter. Henry Lahann, Traver, Cal.

In an anti-rooter the combination of a rubber strip having a recess in the under side of the same, the under side of the strip being concaved, a pair of rings securing the strip in position, and a spring actuated pointed pin mounted in the strip and adapted to engage the snout of the hog.

No. 516,885.—Rubber-Type Printing-Press. John H. Barr, Meriden, Kans.

A printing cylinder having a peripheral dovetailed groove, and a cover of soft rubber having characters in relief thereon and formed with a series of apertures registering with the groove.

No. 517,927.—Compound for Waterproofing Fabrics. Ernest J. Knowlton, Ann Arbor, Mich.

A filling compound consisting of linseed mucilage and Spanish white, substantially in the proportions and for the purpose stated.

No. 518,046.—Composition of Matter for Vulcanizing Rubber. Jean M. Raymond, Paris, France.

The herein-described compound for vulcanizing rubber, consisting of benzine, or its derivations, camphor, and chlorid of sulphur and oleic acid.

No. 517,611.—Clip for Use in Making Joints in Cast-Iron Pipe. Earle H. Gowing, Reading, Mass.

As an improved article of manufacture, a clip for use in filling pipe-joints, the same being composed of rubber, molded in ring form, divided, and having the side for contact with the pipe end slightly dishd or concaved from the outer corner to a point part way toward the inner corner, and from the point to the corner concaved or cut away to a greater extent.

No. 516,719.—Striking-Bag Disk. Charles A. Daniel, Philadelphia, Pa.

A striking-bag disk comprising a rigid frame-work of metal rods provided with rubber coverings.

No. 517,780.—Shield for Pitchers, etc. Margaret L. Buckley, Freeport, Pa.

A rubber shield or protector for vessels, having the perforated elastic disk to extend across and wholly cover or inclose the bottom of the vessel and protect it against injury and the up-turned thickened constrictive rim adapted to engage the foot of the vessel exteriorly only and by its constrictive force bind the shield to such foot and admit of the use of the shield on bottoms of vessels of different diameter.

#### PATENTS EXPIRED.

No. 198,554.—Armor for Flexible Tubing. H. Wakeman, New York city.

The metallic armor for flexible tubing, made of woven or interlaced wire-netting, bent up into a cylindrical form around the tube and its edges connected together.

No. 189,737.—Barber's Aprons. A. H. Hart, Mount Vernon, N. Y.

An apron having part of its surface of light elastic material, and provided with a suitable opening in the elastic portion, so that it may be stretched to pass over the head of the wearer and may then contract so as to fit closely, but without too great pressure, around the neck.

No. 188,108.—Rubber Attachments for Horseshoes to Prevent Interfering. Michael McBarren, Boston, Mass.

An elastic cushion shaped to conform to and partially inclose and surround the base of a horse's hoof and the shoe attached thereto, by means of the overlapping portions, and adapted to be secured to the foot by being clamped between the shoe and hoof, as herein set forth, as a new article of manufacture.

No. 189,262.—Insulated Wire. H. Redding, Boston, Mass., assignor of one-half to J. Redding, same place.

Wire passed through a solution of shellac in alcohol, and then over a series of burners, which serves to give a tough jet-black finish to the insulating coating.

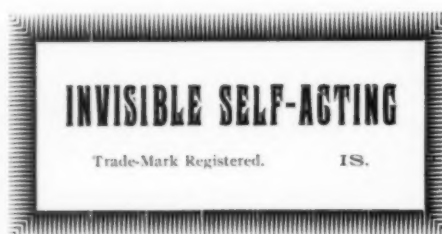
#### THE WOOL-BOOT COMBINATION.

MR. MORSE, of the William Morse & Co., the rubber jobbers, says that the demand this year for the rubber-shoe and wool-boot combination is greater than ever. Judging by the orders which the salesmen of the company are now sending in, they have become decidedly popular. It is a popular article, says Mr. Morse, chiefly because it sells at a popular price. For \$2.50 a man can have the best combination, and he gets as much advantage out of it as he would for a boot much more expensive made entirely of rubber. It is warm, comfortable, and cheap. "Of course rubber people would prefer to sell rubber boots, but we have to supply existing demands and meet the wishes of the buyers, instead of imposing our own ideas upon them," added Mr. Morse.

A GENIUS in Jersey City, N. J., is said to be at work on a device to prevent rubber shoes from slipping.

## An Invisible Rubber Shoe.

A RUBBER people can't see—  
wouldn't know you wore a rubber. That's what the



ON the Shoe.

It covers the sole—  
that's all. And it  
clings to that sole—it  
isn't made to slip off.



OFF the Shoe.

Trade-Marked and Patented.

A good shine is as good as ever with the INVISIBLE, and it can't spoil  
your Patent Leathers—for it doesn't touch them.

### The Invisible Self-Acting—

A dressy sole protector—from mud and dampness.

Manufactured only by the \_\_\_\_\_

## BOSTON RUBBER SHOE COMPANY.



## WILLIAM MORSE &amp; CO.'S NEW STORE.

THE firm of William Morse & Co. (New York) have just moved into a new store which deserves the appellation of "The Modern Rubber Store." Having outgrown their old place of business, No. 78 Reade street, they have taken the large store which extends clear through from Reade street to Duane street. The enormous stock carried by the company requires a vast store, and they have every inch of available space occupied in their new place, which has a basement and sub-cellar that are even larger than the store itself.

William Morse & Co. occupy a unique place in the rubber trade. They are the only concern doing an exclusive rubber jobbing business in New York city. They confine themselves to three lines of goods—boots, shoes, and mackintoshes. There are many large retail rubber stores in New York, but no other jobbing center than that of William Morse & Co. The history of this company is brief. About six years ago the American Rubber Co. opened a store on Leonard street where they sold the goods manufactured by them. The increase in the business necessitated the removal a year later to Church street. Next they removed to the L store which had one entrance on Church and another on Reade street. About three years ago Mr. William Morse became their selling-agent here and he took charge of the store. Early in 1893 Mr. Morse bought out the retail business of the American Rubber Co. and became owner of the store with others who had acquired interests therein. The business under Mr. Morse's charge and control has kept steadily increasing, and now it has become necessary to move into a more commodious place. The company employ no less than thirty-five people, eleven of whom are traveling salesmen who do business throughout the United States.

The new store has two entrances, the principal one being on Duane street. As one opens the door he has to his right large and handsome offices, one occupied by the bookkeeper and assistants, the other by Mr. Morse himself. From the size of Mr. Morse's office one is liable to make the erroneous inference that rent is very low in New York city. To the left of the visitor are show cases in which all styles and shapes of rubber shoes are displayed. The offices of the shipping-clerks are at the Reade street entrance. The vast space between the offices at the two ends of the store is filled with boxes and cases of goods—mackintoshes on the right on a row of shelves one hundred feet long, and boots and shoes on the left. The trolley ladders permit the goods to be piled up to the very ceiling. Down stairs and in the sub-cellar there is an enormous stock of goods.

Morse & Co. do not confine themselves to selling the goods of the American Rubber Co. but deal with other rubber companies as well, although Mr. Morse himself is still the New York selling-agent of the former and attends to all of its business here. Mr. Morse thinks there is money in the rubber jobbing trade, and he expects to beat his own remarkable record as a jobber. One gets an idea of the extent of the rubber trade at seeing such a vast place devoted exclusively to three lines of rubber goods.

## FRANK A. MAGOWAN AS A RAILROAD-MAN.

THE Hon. Frank A. Magowan, of Trenton, N. J., has been elected president of the Central Jersey Traction Co., which has been formed to project a through line of electric railway to connect New York, Jersey City, and Philadelphia, and to consolidate the local electric railways along the line

into one system. The surveys and maps have been completed, and the right-of-way secured, and offices have been established at No. 2 Wall street, New York. The New York journal *Transportation* says:

"Any reference to the proposed New York and Philadelphia electric railway would be incomplete without mention of Mr. Frank A. Magowan, the newly-elected president of the Central Jersey Traction Co., which company has just been organized to carry out the largest and most important electrical railway enterprise which has yet been contemplated. Mr. Magowan is one of the foremost business men in New Jersey, and one of the most active, intelligent, and effective men in the country. He is a man of vast capabilities, and, while yet young, has achieved almost phenomenal success. He is at the head of the principal business enterprises in Trenton; is president of the Trenton Watch Co.; president of the Eastern Rubber Manufacturing Co.; general manager of the Trenton Potteries Co., one of the largest and most successful combinations in the country; president Trenton Oil Cloth Co. and several other industrial establishments, as well as ex-mayor of the city of Trenton. Mr. Magowan is a gentleman of fine attainments, and well known to the financial institutions of New York. No better selection could have been made, and through his leadership and identification with this vast undertaking its success is assured from the beginning."

## A RUBBER FACTORY AT GLOUCESTER, N. J.

A TRENTON rubber-man, who has recently secured employment in one of the Boston factories, is authority for the statement that a rubber-mill is soon to be completed at Gloucester, N. J., for the manufacture of a full line of mechanical rubber goods and that there are \$10,000,000 back of the company. A letter to the postmaster of Gloucester brought out the information that a certain man of that city was the only one who was conversant with the details of this affair. That gentleman, in reply to a letter, says: "I have not heard anything about a new rubber factory being built in this city. Some months ago I was trying to get up a company but failed on account of the parties being short of money. There are some large cotton-mills here idle through the failure of business. They were sold to a cotton-broker in Philadelphia and the machinery is now being sold out. I think the mills will be for sale after the machinery is disposed of. They would make a good rubber plant, as they are on the river-front, with large locks for unloading coal and supplies. The Reading railroad runs into the yard and the Pennsylvania railroad has a depot but six blocks from the mills. There are also boats which run every half hour to and from Philadelphia which is only four miles away. I think it one of the best places for a rubber-mill that could be secured. I will see the owners of these mills and see if they have been approached by any rubber concern, and let you know the result."

## QUICK RESULTS OF PUBLICITY.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Your readers may not all know that THE WORLD is one of the best mediums for getting at the trade that is published. You have just illustrated my rubber "swimming glove" and I have already had two orders,—one from the Goodyear Rubber Co. of St. Paul, and one from E. Bruce & Co., Omaha, Neb. I write simply to say that THE WORLD "gets there" on a new thing as quickly as anything on record.

C. J. BAILEY.

Boston, April 27, 1894.

## RANDOM NOTES FROM PARA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The rains throughout northern Brazil have been most severe, extending down to Pernambuco and Parahyba. The floods have not been higher since 1849. Yellow fever is beginning here slightly.

There have been sold here recently 120,000 kilograms of Sertão rubber at 6 milreis, this being the highest price ever given for rubber in the Pará market.

The rubber crop season is now pretty well over, so that comparatively little rubber may be expected to arrive before September.

Frank da Costa, of La Rocque da Costa & Co., has gone to Europe.

On April 8 at mid-day an alligator was seen gliding about on the water near the workshops of the Pará and Amazon Co. It was killed by a young Englishman with a single shot from his rifle and measured eleven feet in length.

The news comes from London of the organization there of a Brazilian Contracts Corporation, with £100,000 capital, for the establishment of commercial and commission agencies in Pará and other states in Brazil.

The capital stock of the electric-lighting company has been largely increased.

The state congress has opened here under the presidency of the vice-governor, who opened the session with a brilliant discourse. "Our state," said he, "enjoying as it does perfect tranquillity, possessing as it does endless resources, must not stand still. . . . It will rapidly progress if its laws are always inspired by one desire—the public good. And to this desire let us pledge our sacred honor."

GRAO PARÁ.

Pará, Brazil, April 12, 1894.

## COUTINHO'S RUBBER-CURING MACHINE.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We have read with great interest, in your issue of March 15, the article describing the machine for curing rubber-sap invented by Señor Manuel Vianna Coutinho. Can you inform us whether the machine can be purchased, and where? Thanking you beforehand for any information which you may give us on the subject, we remain, yours very truly,

OTTO G. MAYER & CO.

New York, April 13, 1894.

[SEÑOR COUTINHO may be addressed in care of Messrs. Prüssé, Pusinelli & Co., Pará, Brazil. We understand that only a few of these machines have been manufactured as yet, Pará furnishing few facilities for such work except at exorbitant prices. The inventor is desirous of placing himself in communication with parties in the United States who may care to contract for the manufacture of his machine, and, in order that its character may be fully understood, he offers to forward a specimen machine, filled with rubber cured by the new process, to any one making a request for the same.—THE EDITOR.]

## MAKING RUBBER STICK TO IRON.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We notice in the April 15 issue of THE INDIA RUBBER WORLD an inquiry as to how rubber may be made to stick to iron. We notice your mention of different methods, but we think the simplest and most practical method of fastening rubber to iron is the cementing process. We are at present supplying the cycle trade throughout the country with a liquid tire-cement for

cementing rubber tires to wood and metal rims. Since the general introduction of wood rims into the cycle trade there has been a growing demand for a liquid tire-cement. We have therefore placed on the market what is known as our "Red Cross" wood-rim tire-cement. This cement was gotten up especially for wood rims, but we find, on testing it, that it holds equally as well on metal. The cement is readily applied with a brush, being quite thin, and sets in a very few minutes. It is more easily applied, and saves nearly 90 per cent. of the time it formerly required to cement a rubber tire to a metal rim.

ARLINGTON U. BETTS & CO.

Toledo, Ohio, April 17, 1894.

## OLD AND NEW SHOE COMPOUNDS.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Can you give me any idea of the compounds that the Hayward Rubber Co. used in the old Hayward rubber boots? I formerly bought them and they were such excellent wearers that I have wondered if something was not put in them different from what is now used.

G. S. M.

Boston, April 27, 1894.

[THE Hayward compounds were practically such as are used to-day, with one or two exceptions. As the writer recalls them, they used, in addition to the ingredients that are now put in, considerable white lead, a certain amount of barytes, and a modicum of plaster. Exactly why these ingredients were added was never satisfactorily explained,—certainly in the light of present knowledge they should not have been put in a rubber-boot or shoe compound. We fear our correspondent is one of those who are prejudiced in favor of things ancient. As a matter of fact it is our judgment that there never were better rubber boots made than are made to-day, and if the gentleman is open to conviction we shall be very glad to prove what we say.—THE EDITOR.]

## TUNO GUM.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I wish to ask if you are familiar with Tuno or Tuna gum, and also Loma gum, and if there is any danger of their stiffening.

C. M. C.

Boston, March 27, 1894.

[TUNO gum reaches us from Nicaragua, but in what quantities it is impossible to say, as it is not separately listed in the export returns of that republic. In 1891 the records showed the exportation of 5640 pounds of Tuno, but it is not certain that more of this product was not shipped as India-rubber. The sap of this tree yields a rubber said to be whiter than that from the *Castilloa elastica*, fully as elastic, and somewhat more solid. Where the Tuno has been used in friction gum by the mechanical-goods manufacturers, there have been cases where it has lost its life and crumbled to fine powder in the course of a few months. Some of them, however, are using it, and our impression is that they are treating it with an alkaline solution to kill the acid. The gum is exceedingly sticky and tenacious, and, if its life can be preserved, is one of the best stickers among the bastard rubbers. By the way, we think an acid of free resin could be used on friction tape in helping some of the dryer gums to stick. The Adamanta Manufacturing Co. make two or three different kinds of resins so treated that there is no free acid in them. We have no information relating to Loma gum. The name would indicate that it is a rubber of African origin.—THE EDITOR.]

## RUBBER NEWS FROM WAY BACK.

IT seems that the farther from trade-centers one goes the more news one can get respecting rubber-manufacture. Thus THE INDIA RUBBER WORLD learns, from a dealer in Mason City, Iowa, that "the rubber trust now controls the output of all rubber goods, including druggists' rubber sundries and even rubber belting. I was told the other day that when they were making up the trust they lacked five shares of controlling one institution they wanted. These shares represented \$1000 each, but the trust paid \$250,000 each in order to get them."

Naturally the section from which news continues to come respecting cottonseed-oil rubber is one in which no rubber-factories exist. It is none the less interesting, however, to be assured "that the rubber trust bought the secret from an English inventor some six years ago, and its works steadily make its own cottonseed-oil-rubber product at a cost of about 7 cents per pound."

THE INDIA RUBBER WORLD has received, in answer to an inquiry respecting the latter piece of news, a letter which begins:

"If you wish to have an answer to the question you ask with such childlike simplicity, who or where the rubber-trust is, for private information, and promise not to use my correspondence for publication, I will give you the name of the gentleman who manages a number of these rubber concerns in and around New York, who are now and have been using cottonseed-oil for the production of artificial rubber."

Apart from the injunction of secrecy which attends the communication, THE WORLD would hesitate to publish the name of the gentleman referred to; there would be danger of his splitting his sides if he were to learn that he is the head of the "rubber trust" or of anything else other than his private business.

## NEW RUBBER DUTIES IN CANADA.

THE new duty of 30 per cent. ad valorem on rubber cloths is not giving entire satisfaction, as is evidenced by a letter from H. Wilson Barnes, manager for J. Mandelberg & Co., of London and Manchester, to the Hon. G. E. Foster. He points out that the effect of old-country firms opening up factories here increases the industries of the Dominion, but that if the duty on English rubber cloths be raised he can more profitably complete his goods entirely in England and sell cheaper to Canadian customers than by continuing to run a factory here and employing Canadian labor. He submitted that an increase under such circumstances was not conducive to the establishment of his industry in Canada.

Mr. Barnes, in an interview, stated that his house imports the rubber cloth, making it up here into waterproofs. This cloth cannot be woven or manufactured in Canada, so that there is no industry to protect. This is the only line in rubber where the duties have been advanced, and Mr. Barnes stated that it would pay better to import the garments ready made than to make them up here.—*Montreal Herald*.

## THE LATEST NEWS FROM MADAGASCAR.

PRESS reports from Europe during the past month announced the receipt in France of mail advices from Madagascar that, in spite of the strong opposition and repeated protests of the French residents, a concession of the whole southern part of the island has been secured by John L. Waller, who was, until a year ago, the United States consul at Tamatave. The French pioneer colonists, according to the

same report, express the belief that by this concession the vested interests of all the nationalities engaged in the India-rubber trade have been injured. There are reports of war between the tribes in the south of the island and a stoppage of the rubber trade.

The territory in question has been nominally under a French protectorate, but if any such concession as reported has been made it has come, of course, from the native authorities. The New York *Sun* points out that the peculiar conditions obtaining in Madagascar are such that the ownership by an American of a concession for commercial purposes would be equivalent to an American protectorate over the territory affected.

## FOUR HUNDRED TONS OF GUTTA-PERCHA.

THE laying of the new transatlantic cable of the Commercial Cable Co. (which is the company's third line), between Waterville, Ireland, and Fox Bay, Canso, Nova Scotia, is to be finished about the beginning of July. Its conductor will be 500 pounds of pure copper per knot, with a dielectric of 320 pounds of Gutta-percha per knot, making the largest submarine core that has been laid anywhere up to the present time. The material employed in making the cable is 1,100,000 pounds of copper, 800,000 pounds of Gutta-percha, 9,500,000 pounds of steel wire, 1,300,000 pounds of jute yarn, and 1,800,000 pounds of compound. The length of the new cable is 2200 nautical miles. It has been manufactured by Siemens Brothers & Co., Limited, of London.

## SOME USES OF RUBBER IN THE YEAR 2000.

NO little interest has been expressed in a novel just published from the pen of John Jacob Astor, entitled "A Journey in Other Worlds." The object of the millionaire author, in writing this work of fiction, appears to have been to find a medium for expressing his views as to future possibilities in the lines of the scientific development that is already in progress. It appears that while in college Mr. Astor manifested a deep interest in the physical sciences, and it is evident that he has been giving some thought to their practical application. Of course a more advanced world than this could not exist without India-rubber in plenty, and this Mr. Astor has appreciated.

Horses are rarely seen in the era described in the book. Electric phaetons on pneumatic tires run at a rate of thirty-five or forty miles an hour along the country roads. Bicycles are still popular, but the motive power is electricity. In the cities the whole width of the streets, including the space formerly occupied by sidewalks, had to be given up to these swift electric vehicles. The streets are divided into strips, along each of which vehicles of the same rate of travel are required to go in the same direction. The pavements are of steel sheets, half an inch in thickness, laid over smooth asphalt. As there are no horses and the wheels are all tired with rubber, this steel pavement keeps perfectly smooth.

THE Toledo Rubber Co. have issued, for the 1894 trade, two very complete and attractive catalogues of goods of their manufacture or kept in stock from the products of other leading houses. One is devoted to mechanical goods and the other to druggists' sundries. The catalogues are of good size, liberally illustrated, and quote prices for the goods listed. Special attention is called to the advantages for the prompt delivery of goods due to the good shipping facilities at Toledo.



## CONTRIBUTIONS TO THE CHEMISTRY OF INDIA-RUBBER.

By P. Carter Bell, F. I. C., F. C. S.

IV.—THE ACTION OF THE SULPHIDES OF THE HEAVY METALS  
UPON CAOUTCHOUC.

A S sulphur seems to have such a wonderful effect upon caoutchouc, changing its entire character and bringing about a multitudinous variety of new substances, would the same effect be produced if the sulphur were in a combined condition and not in a free state? Among rubber-manufacturers it has always been taken for granted that sulphur in such a combined condition will bring about vulcanization. For instance, if rubber is incorporated with about 20 per cent. of golden antimony sulphid and subjected to a temperature of 300° F. for two hours a vulcanized product is produced. Now as golden antimony sulphide contains from 5–30 per cent. of uncombined sulphur,—*i. e.*, sulphur in an active condition,—this sulphur of itself would certainly bring about such a change; therefore where is the proof in such a case that combined sulphur will produce vulcanization? In the following remarks it will be shown from actual experimental work the worth of such an assumption.

There are only two sulphides of antimony known: the ordinary antimonious sulphid,  $Sb_2S_3$ , and the antimonic sulphide,  $Sb_2S_5$ . Up to the present time only one of these sulphides has been known to the rubber trade, and I do not see why the other should not be used equally as well. For certain purposes the antimonious sulphide is far superior, especially where jet black and glossy rubber compounds are required.

The great objection to the commercial sulphides of antimony is the great excess of free sulphur they contain, and this is greatly due to the bad method of preparation. If some firm could produce these compounds chemically pure at commercial prices, and prove to the rubber manufacturers the fallacy of buying inferior material, which can only be ascertained by a strict chemical analysis, this in the long run would prove beneficial to all concerned.

The various antimony sulphides which have come under the writer's notice have all been more or less adulterated with sulphur, and there is no doubt that this excess of sulphur is an adulteration which should be avoided just in the same way as other sophistications are guarded against. Below are a few analyses of antimonic sulphide:

	I.	II.	III.	IV.
Antimonic sulphide.....	93.38	69.30	77.85	91.10
Free sulphur.....	6.62	30.70	22.15	8.90

In the above analyses No. 1 was the finest commercial sample to be obtained in the market; No. 4 was sold by a reputable firm as chemically pure; No. 2 was a sample which was obtained from a firm who considered their product the best on the market, and it turns out the worst of the series.

When such a compound as No. 2 is used for vulcanization, the rubber-manufacturer may well wonder how it

is that his goods effloresce when he knows very well that no sulphur has been used in them. The efflorescence of sulphur is a great objection in colored goods, as it entirely masks their brilliancy, coating the rubber surface with a thin crystalline white film. To overcome this objectionable efflorescence of sulphur a vulcanizing substance must be used which will bring about a double decomposition, and leave no free sulphur in an active condition. The sulphur salts of antimony have these excellent properties when brought in chemical contact with caoutchouc, which at a temperature of 280–300° F. gradually assimilates sufficient sulphur to form a vulcanized compound or a sulphur derivative, and at the same time reduces the metallic sulphur salts. By these means no free sulphur can possibly be left in the rubber compound, and no efflorescence will therefore ever take place.

The method which was adopted for estimating the excess of sulphur in the several samples of antimony pentasulphide was as follows: A thoroughly-dried portion was carefully weighed and extracted several times by pure carbon bisulphide until the whole of the sulphur was extracted. The liquid containing the dissolved sulphur was evaporated to dryness in a tarred flask, and subsequently weighed, the percentage of sulphur being calculated accordingly.

Absolutely pure antimony pentasulphide is slightly attacked by carbon bisulphide, extracting a little of the sulphur, about 5 per cent., and that this is wholly due to a decomposition of the antimony pentasulphide and not to the action of the carbon bisulphide on admixed sulphur, is shown by the fact that much less than two atoms of sulphur is withdrawn from each molecule of antimony pentasulphide by carbon bisulphide and also by the reactions of the antimony pentasulphide, especially the solubility in ammonia in which antimony trisulphide is insoluble and the insolubility in carbonate of ammonia which dissolves antimony trisulphide.

It has been supposed that the action of carbon bisulphide proves the non-existence of antimony pentasulphide (Rammelsberg, pp. 52, 193).

As carbon bisulphid to a certain extent is known to have the power of attacking antimony pentasulphide, then to arrive at the extent of a fraudulent admixture of sulphur, an allowance of 7 per cent. of extracted sulphur will have to be made, the surplus amount must then be treated as an adulteration. Thus an amount over and above that amount found to belong to the chemical constitution of the antimony pentasulphide, found in samples of antimony pentasulphide make them perfectly unfit for the India-rubber-manufacturer and most certainly should be guarded against. Therefore the amount of adulteration in the samples of antimony pentasulphide which have come under the writer's notice is as follows:

	Percentage Adulteration.	Real Value Per Pound.
No. 1.....	Pure	\$0.255
No. 2.....	23.70	.20
No. 3.....	15.15	.22
No. 4.....	1.90	.251

The manufacturer therefore will lose, if he is the purchaser of No. 2 or No. 3,  $5\frac{1}{2}$  cents, and  $3\frac{1}{2}$  cents per pound respectively,—a not an inconsiderable item. How important it is for manufacturers for their own sakes to pay strict attention to the purity of the crude materials entering their works. This is not an isolated case of fraudulent preparations, as many other chemical substances that are used to-day will not bear the scrutiny of a chemical research. The manufacturers are not wholly to blame for

many losses which they inadvertently sustain, owing to the deterioration of their goods; perhaps most of the blame might be thrown upon the shoulders of the manufacturing chemist, who is the person that rubber men implicitly depend upon for the proper chemicals used in their various manufactories. Again, chemical manufacturers are generally totally at a loss to know what to do in some cases, as they are perfectly ignorant of the many mysterious ways rubber is manipulated, and very often they are perfectly ignorant to what use their chemical substances are put to, that being the case they can hardly be blamed for not being able to proffer advice when the rubber-manufacturer is so fond of secrecy with regard to every detail involved in his work.

## GIVE HARD RUBBER A CHANCE.

*By George F. Virtue.*

**A**N article in the November issue of THE INDIA RUBBER WORLD, by W. R. Mason, on hard rubber as an insulator in connection with electrical railway work, was of deep interest to me, and I venture to send you this brief communication regarding it. It seems to me the time is particularly favorable for discussing this question, as hard rubber has recently been rejected by one of the most prominent electrical engineers in the country, and, in addition to that, the board of underwriters in one of our largest New England cities has recently reported against it.

Now, as a manufacturer of hard rubber I should like to ask why has hard rubber been condemned? Surely Mr. Mason shows that he believes that the use of hard rubber should be increased. He speaks of its well-known insulating qualities, and certainly gives an opportunity for argument from rubber-manufacturers. Rubber has been many times condemned, and very unjustly. For instance, our friends across the water discontinued its use because manufacturers of different insulations containing rubber would not guarantee them for twelve years. This, of course, refers to a large cable, which lasted far more than twelve years without repairing, and then was repaired for a simple mechanical injury. The writer not long ago, in talking with an electrical expert, asked why he did not prefer hard rubber to some shellac compounds. He replied that it was because of the sulphur that he heard rubber-manufacturers used. Now if, after the goods are in a marketable shape, there can be any sulphur resurrected from them by time or by exposure to the sun, I should like to know it. I believe all rubber manufacturers will agree with me that there is no danger of such a trouble. This man believed further that rubber continued to cure after it was marketed, until it deteriorated hopelessly. The writer asked him if he thought quality had anything to do with the durability, and he said no, the better the quality the quicker it deteriorated,—proving conclusively that his knowledge of hard rubber was far from complete. He claimed that so far as insulation was concerned, hard rubber was all that could be desired, but that it lacked strength. The elec-

trical companies and railway people are looking for cheap goods. They are not looking for quality, and how can they, buying the cheapest shoddy compounds that can be made up into hard rubber, expect to get results that should come from a first-class quality of vulcanite?

Take the insulator represented in the cut accompanying Mr. Mason's article. Suppose that it weighed a half-pound. The rubber in it can not be figured at less than \$1 per pound, washed and dried. One can readily see what percentage of rubber this would contain when the finished article is sold for less than one-fifth of the price of the crude material, and is still called rubber. Mr. Mason further states that many experiments have been made with other compounds, principally those that have a shellac basis, but thus far no insulator has embodied all the desirable qualities found in hard rubber. The writer is pleased to know the high resistance found in the insulator tested by Mr. Mason, as he feels sure if the electrical people would take the time to look into the quality and were willing to pay a fair price for it, they would get a compound that had long life, high resistance, more strength, less leakage, and infinitely greater reliability than can be found in any shellac compounds.

Now a word to those who have decided against the use of hard rubber. Be sure that it is hard rubber you have condemned. Certainly you would not wish to discriminate against an article that can be demonstrated to have few equals and no superiors, up to date. I can see where many of our electrical-supply companies are at fault. They are selling whatever finds the readiest market, and in this energetic strife for business feel that they cannot afford to talk high prices and quality. In this they are short-sighted, in that they take no thought of the future. They will listen to what some electrical engineer says when he remarks that hard rubber does not stand up to its work. As a matter of fact they have never seen a half-dozen hard-rubber insulators. For instance there is made in Chicago an insulator that has been sold throughout the east and condemned. It costs 15 cents. If it were made of vulcanite, the rubber alone would cost more than that. Can

that be called hard rubber? Can any one sell nine ounces of first-class hard rubber for 15 cents? In other words, if the electrical experts would appreciate the fact that if they go below 30 cents per pound they do not get hard rubber, perhaps they would talk less about its shortcomings. Just now the shellac compounds are being pushed, but any one knows that shellac will not stand a heat above 150° F., while hard rubber is cured at 350° F.

Poor compounds have been sold by several rubber-manufacturers in which was a percentage of recovered rubber. These manufacturers knew perfectly well that, when they put shoddy into their goods, the durability of

the goods could not be guaranteed. The most expert rubber-man in the world cannot tell what percentage of sulphur is contained in recovered rubber, nor has he any idea what other ingredients are contained, for which reason he is working entirely in the dark, and doing it simply because his customers are demanding shoddy goods at a cheap price. Referring again to shellac, were it not for the 90 ton presses that form the matter into a solid mass, it would not last a month as an insulator. As it is, there is no record of any of it having existed for more than two years, while hard rubber of good compound has stood the test for five years or more.

### SOME VIEWS OF CRAVENETTE.

A REPRESENTATIVE of THE INDIA RUBBER WORLD recently called on W. A. Walker, manager of the Mandelberg Rubber Co. (New York) and asked him about the history of the cravenette movement in England. Mr. Walker, it will be remembered, was with the Mandelberg company in England at the time that cravenettes were first brought out. He said that he first remembered seeing the goods in 1885; that there was an attempt made to introduce them, but that it moved very slowly. In 1887, however, which he remembered as the jubilee year of the queen, these goods had a decided and remarkable boom. Not due to the fact that it was jubilee year, but because the season was an especially dry one for England. All of the twelve leading rubber-clothing manufacturers in England took hold of the goods, made up large quantities of them, and sold them all over the world. Mr. Walker himself introduced them in France and made most satisfactory sales of them. They sold very well indeed for about four years, and then stopped with a singular suddenness. Exactly what this reason was for loss of popular favor no one seemed to know. All of the large retailers were left with big stocks of cravenette garments, and were a long time in working them off even at a loss. Mr. Walker spoke of the cravenette as being simply shower-proof, and a garment that would never be able to oust the rubber-coated garments. He said that he had noticed the American trade in rubber clothing followed the course of the English trade with great exactness, and he confidently predicted that the cravenette would experience the sudden loss of popular favor that had been experienced in England. Indeed, he saw already signs of this loss of popularity.

\* \* \*

C. N. CARTER, the well-known cloak-man in Boston, speaking of cravenette, said to an INDIA RUBBER WORLD correspondent: "I have known for more than twenty-five years that twills made of wool were shower-proof. Indeed, I question if 5 per cent. of the so-called 'cravenette' goods on the American market are treated by any water-repelling compound at all. Of course cravenette is now more or less popular, but it has its limitations. It can be furnished only in black, blue, green, and red, and three shades of brown, and the same number of shades of grey. I think these last grey shades will eventually outsell all the rest. There is this trouble about greys, however: the white thread in them is likely to be cotton, and this is likely to make the goods wrinkle. I do not anticipate that the cravenette will do much harm to the general mackintosh trade. At the same time, the ladies are to-day calling for these garments everywhere. For the spring and summer trade of course very light weight

goods will be used. Not a few manufacturers will weave a shoddy backing on these goods to give them weight, but there is no reason why the cravenette cannot make a good winter garment. Another trouble with cravenette is that manufacturers will mix mohair with the goods because it is cheaper, and then the goods will cockle."

\* \* \*

To ascertain the status of cravenette garments in the New York trade this spring, a representative of THE INDIA RUBBER WORLD talked with the buyers of water-proof garments in some of the principal dry-goods houses of New York. These gentlemen, being in charge of the departments where cravenette comes in direct competition with mackintoshes, are the best judges of the matter so far as the actual facts with regard to the standing of cravenette is concerned.

Mr. Whaley, the buyer of water-proof garments of the house of Hilton, Hughes & Co., said: "Yes, within the last six years there has certainly been a steadily growing demand for cravenette. Naturally the demand is almost entirely confined to the ladies. Very few men wear cravenette, and it is not likely to appeal to them more in the future. The chief merit of cravenette is its lightness and freedom from odor,—things highly valued by ladies who have no occasion to be out in stormy weather. Of course, for severe and stormy weather a mackintosh is indispensable. Those whose business requires them to travel or be out in all kinds of weather would not find cravenette serviceable, but for ladies who want merely protection from an occasional shower or rain, cravenette is eminently suitable. My wife has had a cravenette garment for five years, and the claims made for it have been justified by the test of experience. It is certainly waterproof, though not in the same degree as rubber garments. But we can hardly expect that. For the large classes of women who are not in business, who do little walking in bad weather, and who, in short, want a waterproof garment for ordinary purposes merely, cravenette is a satisfactory garment." Mr. Whaley stated that the firm bought their cravenette goods from the American manufacturers, who import the cloth from Bradford, Leeds, and other English cities, and make up the garments here.

Mr. F. D. Mann, the buyer of the house of R. H. Macy & Co., expressed himself more emphatically and positively than any other of the buyers seen. "It is my opinion," he said, "that the mackintosh will be relegated to the position of a storm garment, and that cravenette will take its place for all ordinary purposes of life. The mackintosh was all right as long as it was alone in the field. The objections to it—weight, odor, etc.—were always strong, but they had to be overlooked, for



protection from rain was necessary, and nothing supplied it except the rubber garment. Now a substitute has been found, cravenette, which seems to have all the elements of popularity. So far as we know it is really waterproof and answers the purpose perfectly. No one has complained to us about it, although we sell the goods right along. So far the demand for cravenette is confined to ladies, and to those of the middle and higher classes. Working and business women don't wear it, and have not learned to appreciate it. But it is certainly adapted for the uses of everybody who is not exposed to rain for more than a short while at any given time. Cravenette has the further advantage, besides being neat, light, porous, and odorless, of being really an over-garment, which can be put on over a jacket or an overcoat even, which cannot be done with a mackintosh, on account of its weight when it gets wet. By the way, the cravenette people are branching out and making spring suits for ladies from cravenette cloth. This seems a feasible thing."

Mr. Mann added that price has nothing to do with the popularity of cravenette. There are all grades of cravenette garments as there are all grades of rubber garments. The house of Macy, like the others, buys its cravenette garments here, of the houses that import the cloth and make it up on this side.

Substantially similar opinions were expressed by buyers of other large dry goods houses. Mr. Mann's is the most positive view of all. There seems to be a general concurrence of opinion upon the fact that cravenette is growing in favor and superseding the rubber waterproof garments in certain circles of consumers. Men will continue to use the mackintosh, and so will working-women. But fashionable ladies and middle-class women who only go out for the purposes of social intercourse and domestic economy find cravenette a good rain-protector and use it.

Just at present trade is dull, and cravenette is not in any specially active demand, though this is the season for buying it. The reason is, however, in the general state of trade.

## THE OUTLOOK FOR THE MACKINTOSH TRADE.

**A**LTHOUGH many waterproof garments were sold during the past season, it cannot be said to have been a good year for the mackintosh trade. The weather reports show that 1893 was one of the driest years on record, both in the United States and in Europe. Certain portions of the United States were almost without rains for months, and, but for the fact that in smaller towns mackintoshes were widely used instead of overcoats, the business would have made a very poor showing. Besides, the general stagnation in all lines of business had its effect on the rubber-clothing trade.

The general lowering of prices in cottons and woollens has also had a decided effect on the mackintosh trade. Although woollens and cottons are now lower than ever before, especially in low grades, buyers are afraid to place orders lest the effect of the new tariff should be to make prices still lower, losing sight of the fact that even if a change in duty should occur, it could not apply to this year's business.

The decline in sales, however, has not prevented a very marked and decided improvement in the American mackintosh. In fact, manufacturers in this line have been making rapid progress, both in the making of fabrics and the building of garments. While prices have become lower, the quality of goods has become better, and this no doubt will stimulate and increase the mackintosh business. The retailer of mackintoshes was long heavily handicapped by the high price of good garments, but this is now a condition of the past, and a wide extension of the use of these garments may now be looked for.

As to styles nothing very radical has occurred. The cape coat still holds its place as the most desirable and best selling garment. The tendency in this garment, however, is to make it more roomy and even longer than ever before. The capes are also very full, and seem to grow in length with the size of the garment. The velvet collars appear to have come to stay and are being used on some of the finer grades of cape coats. They certainly dress the garment off nicely.

The old-style Inverness, with what might be called "cape sleeves," is hardly holding its own—though this style has quite a prestige in one or two large eastern cities—especially where there are colleges. The all-round cape Inverness, made sleeveless, is the most fashionable cape garment, and, as it is con-

structed on common-sense principles and can be worn over almost any coat, it is very popular for that class of buyers who want something not worn by everybody. This style garment this year is being made mostly in solid colors, with blacks in a large majority.

Serges and cashmeres are the most popular fabrics, and a very handsome garment is one made with cashmere on both sides. Velvet collars are used almost entirely and they should be deep and large.

The walking box-coat brought out last year has become very popular, and is sure to be in large demand this season. This is a hard garment to get just right as to fit, as it has no cape to hide defects in cut or finish. The proper things in these box-coats are smooth Meltons made double-breasted with velvet collars; velvet cuffs have hardly crept into the rubber trade as yet, but it will be no surprise if they should.

The prevailing shades in box-coats are black, blue, brown, and two or three different colorings in tan. The latter effects are the newest and are the proper thing for the dressy man. These tan-colored mackintoshes make up very handsomely, and with pearl buttons and velvet collars are sure to please the fastidious. Most all the manufacturers are making some of these goods this season. Many of them are beautifully finished with silk-lined sleeves and made both strapped and lapped seams.

The latest garment, however, is a long, loose-fitting single-breasted Chesterfield. This is a rather lighter coat than its older favorite, the double-breasted box, and it is thought by some manufacturers that it will take well. The garments shown this season in this style comprise nearly all the fabrics in use. A very handsome garment, however, is made out of English covert cloth, with velvet collar to match the shade.

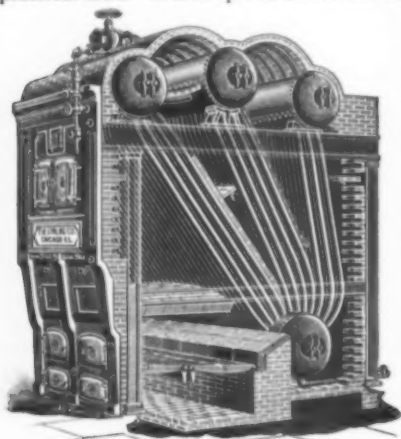
There is an enormous variety of linings to select from, and in no department of the business have there been shown such marked improvements as are now to be seen in the many different patterns in linings.

THE Technical Rubber Goods Manufacturing Co. (C. Schwanitz & Co.) of Berlin, have declared a dividend of 12 per cent. on \$207,500 capital—the same as last year. This has been the average rate of dividends since the establishment of the company, in 1874.

## THE STIRLING WATER-TUBE BOILER.

THE "Stirling" is the latest scientific and mechanical evolution of all preceding research, experiment, and result, added to years of careful study and individual experience. The aim of its maker has been to simplify and strengthen, to render safe and more effective, and, at the same time, to cheapen first cost and secure the greatest possible economy in labor and fuel.

Years ago a few prominent engineers predicted the present imperative demand for a safe high-pressure boiler. The demand arose and its increase led to numerous attempts to obtain a high pressure with safety. A rapid increase, however, in the number of disastrous explosions, showed conclusively the necessity for a marked improvement in the scientific conception and mechanical construction of the boilers then in use. This condition of affairs encouraged the effort that produced the Stirling, which is not only safe at high pressure, but has also the other essential features of an ideal boiler. Every detail has been carefully calculated and tested thoroughly by educated and practical men. It is simple in construction, yet the studies and



scientific arrangement of all the parts insure safety, economy, efficiency, and durability. Simplicity of construction is a matter of primary importance, being elementary in cheapness, economy, safety, and to a number of other necessary qualities of a perfect boiler.

The Stirling consists simply of three upper

wrought-steel drums connected with each other and with a lower or mud drum, also of steel, by tubes expanded directly into the drums. This comprises the whole boiler, not an ounce of cast iron or cast steel being used in its construction. The importance and value of this latter quality will be readily recognized and promptly conceded by all competent authorities, but to more fully appreciate its value it is only necessary to remember that from the earliest inception of the more advanced theories of boiler-making, it has been the constant endeavor of the thinking inventor and manufacturer to eliminate cast metal from the construction of steam-boilers. This has never been accomplished until the advent of the Stirling, which in this respect, as in others, marks a new era in the improved generation of steam.

The demand for high-pressure steam in connection with modern engines is increasing rapidly. The Stirling boilers are all subjected to a cold-water test of 200 pounds, and are guaranteed for a working pressure of 150 pounds with economy and safety. The value of this feature will be appreciated by engineers and steam-users.

The superiority of a thin heating surface over the thick plates used in ordinary boilers must, upon the most casual examination, be apparent to all steam-users of limited experience. In the horizontal tubular boilers the comparatively thick shell hinders the transmission of heat, and, being directly over the fire, tends to burn and blister as the accumulation of sediment

and scales increase. The result is that the life and efficiency of the plate are destroyed, and all the conditions favorable for a disastrous explosion are formed. The thin tube surface, on the other hand, so assists the transmission of heat that the most intense fire cannot injure the surface while the tube is covered by water on the inside. This is true in a measure of all water-tube boilers, but especially true of the Stirling by reason of its construction. Riveted joints are concededly the weakest parts of the ordinary boiler's structure and consequently least adapted to stand the unequal expansion resulting from the various strains produced by fire-contact. This serious difficulty and objection is wholly done away with in the Stirling.

As stated above, the boiler consists of three upper drums and one lower drum, respectively thirty-six and forty-two inches in diameter, all connected by means of three-and-a-quarter-inch tubes, which are expanded directly into the drums, and so bent as to allow for the varying degrees of expansion and contraction. In the end of each drum is a sixteen-inch manhole, faced elliptically against which a plate is fitted and held in place by wrought-steel bolts. The removal of these manhole plates gives access to every tube in the boiler, and the drums are large enough to enable a man to work inside conveniently. Water is fed into the rear upper drum and flows through to the mud drum beneath coming into contact on its descent with the ascending gases, and becoming heated to a sufficiently high temperature to cause the precipitation of magnesia, lime, and other solid matter that the water may contain, into the mud drum beneath. As a result, the two front rows of tubes are filled with chemically pure water, and all danger of scaling is thereby removed.

One of the principal claims made for the Stirling is its ability to handle successfully very impure water, a claim which is well borne out by its operation at Pittsburgh, Wheeling, Cincinnati, Louisville, St. Louis, and New Orleans, where the feed comes from the Ohio and Mississippi rivers in a very muddy and foul condition. At some of these points, notably Pittsburgh and Wheeling, it is claimed that the boilers have run day and night for months under a constant steam-pressure of 150 pounds without being closed down for cleaning, the only work found necessary having been the opening of the blow-off cock two or three times in the twenty-four hours, and blowing down water one or two gages.

Another claim made for this boiler is that it is very economical in the use of fuel, and this was practically demonstrated by a test made of four 250-horse-power boilers at the San Francisco and San Mateo Street Railway Co.'s plant, when an evaporation of 10.5 pounds of water per pound of coal under actual conditions was obtained.

Mr. George H. Barrus, the well-known expert steam-engineer of Boston, has just completed a careful and thorough test on a 250-horse-power Stirling boiler at Portland, Maine, with the following results, proving emphatically the claims made for this boiler as regards economy and dryness of steam :

Water evaporated per lb. of coal.....	10.54 lbs.
Equiv. evap. per lb. of coal from and at 212°.....	11.025 lbs.
Equiv. evap. per lb. of combustible from and at 212°.....	12.061 lbs.
Moisture in steam while boiler was developing 380 h. p. or 52% above its rated capacity.....	0.19 %
Moisture in steam while boiler was working at its rated capacity.....	0.06 %

The company have just issued a new catalogue which they would be pleased to send to all interested parties. This catalogue contains much valuable information besides that pertaining to the boiler, and can be obtained by addressing the company's New England agent, J. Bradford Sargent, No. 620 Atlantic avenue, Boston.

## HOW MR. FLINT SAVED THE REPUBLIC IN BRAZIL.

By William Hemmingway.

CHARLES R. FLINT has lately shown to the world how easy it is for one man to put an end to a dangerous revolution when that one man knows how. Now that peace has been declared in Brazil, and the stability of the republic is assured, it is interesting to look back upon the history of one of the most remarkable wars in recent times.

Mr. Flint is not a fighting man. He is a busy New York merchant. He has never enjoyed the advantages of a technical training for either the army or the navy. His chief resource in the recent emergency, wherein Brazil was threatened with the restoration of the empire and the United States with a disastrous blow to their commerce, was his wonderful executive ability, coupled with that quality of pluck which is blind to defeat. It is more than likely, too, that Mr. Flint's well-known diplomatic ability was of aid in helping to retain the friendship of the United States for the young South American republic in difficulties. As a delegate to the International American Congress at Washington, in 1889, he had been of much assistance to Brazil.

When Mello and his associates tried to overthrow the Brazilian government, late last September, they took advantage of the jealousy existing between the navy and the army which arose from the fact that the chiefs of the army occupied the important government offices. Thus Mello was enabled to secure a sufficient following to rebel with about all the naval vessels in commission belonging to the government. Although the rebels at no time held possession of as much Brazilian territory proportionately as Cape Cod compared with the total area of the United States, yet, owing to their possession of the formidable iron-clad *Aquidaban* and other modern men-of-war of great power, they occupied an impregnable position dangerously near the national capital, and were enabled to encourage the dissatisfied elements in the country and give support to those who desired the reestablishment of the monarchy.

It has been always the policy of the United States to encourage as far as possible the spread of the republican form of government; nevertheless our sympathy was not shown at first in any pronounced way. Furthermore, the downfall of the existing government in Brazil would inevitably mean the loss to the United States of hundreds of millions of dollars' worth of commerce each year. Here was an emergency to appeal to the heart of a patriot. The greater part of the India-rubber used in this country comes from Brazil. Upon the manufactures of this important product alone in the United States the support of a hundred thousand people directly depends. As organizer and treasurer of the United States Rubber Co., and as a merchant handling other South American products, Mr. Flint understood the situation perfectly.

Besieged in his capital by a most formidable navy, and without one ship to fight it, President Peixoto was in a most difficult position. He was practically without vessels or sailors, with an unprotected coast-line of 1800 miles and with all the naval officers and sailors in Brazil in rebellion against him. To build and equip a vessel that would have an even chance in a fight with the *Aquidaban* would have required the labor of a year in any first-class shipyard. Not one iron-clad could be bought anywhere. Mr. Flint burdened the cables with messages to all the countries of the world, inquiring for warships, but not one could be bought. Naturally no European government would do anything to assist in the main-

tenance of a republic, the bulk of whose trade goes to the United States. Even the manufacturers of the Whitehead torpedoes cabled to their agents that they might sell these implements of war "to every country in the world except Brazil."

Peixoto turned to the United States, but there was only one warship in this country that was not the property of the government—the *Ericsson Destroyer*.

Here was a situation in which a man of purely technical training in the art of war would have said "there is nothing to do but wait a year." But to do this would be fatal. So long a delay would surely have ended in the reestablishment of monarchy in Brazil. Mr. Flint was cruising on the cup-defender *Vigilant* when, on September 29, he received a letter from Dr. Mendonça, the Brazilian minister at Washington, telling of the trouble at his home. He at once hastened to this city.

"What Brazil needs," said Mr. Flint, "is a fleet of ships capable of throwing dynamite and possessed of the highest speed."

Within five days Mr. Flint had informed himself by cable and otherwise as to the exact speed and ability of practically every available ship in the world. By October 6 he sent to Dr. Mendonça a list of all the steam-yachts in the world capable of going eighteen miles an hour or faster. Conferences were held on board Mr. Flint's steam-yacht *Javelin*. In her cabin he made arrangements with the agents of the Hotchkiss Gun Co. whereby guns were promptly shipped from Paris to this city. There were not enough guns in Paris, and the Hotchkiss people suggested that the gap could be filled up by using their exhibit at the World's Fair in Chicago.

Mr. Flint made a contract with Mr. Very, agent of the Hotchkiss company, at 1 o'clock one afternoon. Shortly afterward, in the Grand Central station, in New York, he dictated a contract for the purchase of the dynamite gun which afterward did so much toward terrorizing the insurgents into a peaceful frame of mind. Thence he hastened to Chicago and met Director-General Davis, who expressed his thanks for Mr. Flint's services on the committee that received the nation's foreign guests, and asked if he could be of service.

The Hotchkiss company had previously applied to the director-general for permission to remove their exhibit forthwith, without waiting for the end of the Fair, and they had been refused. Now Mr. Flint pleaded for the release of the munitions of war. He explained that he was in the position of the man in Texas who wanted his gun and wanted it — bad. He also explained that the question here was not a mere sale and release of guns, but whether the republican form of government should continue or a monarchy be established in Brazil. He got the guns. They were taken away secretly, the men working from midnight almost until dawn on several nights.

Meantime ships were being examined in order to select from them the swiftest possible cruiser. The *Ericsson Destroyer* had already been bought. After careful examinations by experts, lasting more than a week, *El Cid*, the swiftest flyer of the Morgan steamship line, was purchased for \$500,000. She was to carry the great fifteen-inch dynamite gun,—the most destructive one ever built.

Now began a period of hard work that will always be remembered as among the quickest and most thorough preparations for war ever known. The *Destroyer*, renamed the *Piratinny*, was taken to the Erie basin and some necessary changes were made



in her. Because she was not swift enough two tugs were bought to tow her to Brazil. Meantime the cargo was ripped out of *El Cid* as soon as she touched her pier. The 'longshoremen never worked so fast before and probably never will again until another peaceful passenger ship is to be made over into a terror of the sea. Four tugs whisked *El Cid* to the Morgan Iron Works, at the foot of East Ninth street. Gangs of men were put to work upon her, making the changes necessary to fit her for her new work. Night and day were alike. Electric lights were on every hand. Not one nook or cranny in the ship was left in darkness. All that part of the East-river front of the metropolis was brilliantly illuminated by the lights upon *El Cid*.

Torpedo-makers at Providence and New Haven and Cold Spring were driving ahead at furnishing ammunition. A torpedo-boat was wanted. No one cared to suggest to Mr. Flint that his own steam-yacht, the *Javelin*, was the best boat available, but this idea soon occurred to him without prompting.

"Look her over," he said to an expert one day in the *Javelin's* cabin; "if she will suit she shall be fitted up." The expert's report was favorable, and the *Javelin* was at once sent to City Island to be made over for war uses. She was the swiftest available boat in America.

I have endeavored to give some idea of the haste and thoroughness with which the work of getting ready for battle was performed. Ammunition and rapid-fire guns were forwarded from London, Paris,—in short from every part of the civilized world. Mr. Flint obtained from Police-Superintendent Byrnes the necessary legal permits for Sunday work and Sunday transportation of arms and ammunition and stores. Two 55-pound Hotchkiss guns arrived from Paris late one afternoon at the bottom of a steamship's hold. By midnight they were on the deck of *El Cid*, ready for mounting. These things illustrate the spirit in which all the Americans concerned lent their aid to the cause that meant so much to American commerce.

The dynamite cruiser *Nictheroy*, formerly the passenger

steamship *El Cid*, was armed, equipped, manned, and ready for sea on November 21, 1893,—just seven weeks after she finished her last trip as a passenger-ship. She was commanded by Captain Baker, who was captain of the clipper ship *Young America* when she established the fastest record around Cape Horn, and who once quelled a mutiny single-handed. Her officers included sixteen graduates of the United States Naval Academy at Annapolis, all of whom had held United States commissions. Nearly all the crew were Americans. In manning the ship Mr. Flint had brought into service his well-known accurate judgment of men. The most effective part of the *Nictheroy's* armament was the famous 15-inch dynamite-gun which, from its position on the bow, could sweep the horizon at any angle and hurl a projectile of explosive gelatine weighing from 50 to 200 pounds a distance nearly three miles. The cruiser *America*, formerly the passenger-ship *Britannia*, and the *Piratinny*, formerly the *Destroyer*, with her deadly submarine gun, accompanied the *Nictheroy*.

The fleet was not sent to sea without difficulty. J. C. Alves de Lima, Brazilian consul-general to Canada, who sympathized with Mello, tried to put legal obstructions in the way. But here again Mr. Flint had anticipated the danger and had fortified himself with the opinion of United States District Attorney Mitchell. The ships got off without delay. President Peixoto decapitated Señor Alves,—only officially, of course.

How the fleet made for Rio de Janeiro, how her dynamite-gunner, the most expert in the world, demonstrated his deadly accuracy upon a desert rock in mid-ocean, and how Mello soon thereafter quit fighting, are all matters of record. Admiral Benham's shot at the *Guanabara*, that taught Brazilian rebels and all other people that American ships must not be molested, has received its due meed of praise. But probably the one man to whom the greatest credit will be awarded is the American merchant whose answer to the impossible problem—"We'll use high speed and dynamite"—will ever remain memorable.

## RUBBER SALESMEN ON AND OFF THE ROAD.

OF the many men on the road selling rubber goods from Philadelphia few, if any, are better known than Mr. M. L. Rossiter, a traveler for Messrs. Richard Levick's Son & Co. Mr. Rossiter is a native of the Keystone state, and most of his business career has been passed in the Quaker city. His connection with the rubber line began in January, 1882, when he went with Messrs. Sayer & Austin as traveling salesman for

the state of Ohio. After being with this well-known Philadelphia house for a year Mr. Rossiter went to Chicago and was engaged in developing a specialty line. Three years later saw him back in Philadelphia, again with Sayer & Austin, with whom he remained two years, working the states of Pennsylvania and Ohio mostly, and building up a good trade. With Messrs. Town & Brother, of Philadelphia, Mr. Rossiter also traveled



M. L. ROSSITER.

in Pennsylvania, giving especial attention to mechanical rubber goods and general rubber mill-supplies. It was in August, 1890, that he joined the road forces of Richard Levick's Son & Co., and he is still with that company, selling their general line

of rubber goods throughout the entire state of Pennsylvania after making more stands than perhaps any other man in the line in the state. It is needless to say that Mr. Rossiter is very well known in the trade and that he counts his friends among the buyers by the hundred all over his territory. He is an all-around general salesman and understands the many lines that go to make up a complete stock of rubber goods, such as are carried by his house. When not on the road Mr. Rossiter's home is in Philadelphia.

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GEORGE B. BURNHAM, salesman for the Tyer Rubber Co., Boston, has resigned his position and accepted one with J. H. Horne & Sons, of Lawrence, Mass., makers of paper-mill machinery.

—George H. Sargent, who has had charge of the Tyer Rubber Co.'s office in Boston, will hereafter look after the New England trade for that company.

—E. L. Hearsey, lately superintendent and selling-agent of the Pacific Rubber Co., has become the selling-agent for New York and vicinity, Philadelphia, and Baltimore, of the Norfolk Rubber Co., with whose mackintoshes Mr. Hearsey expects to do a fine business. Mr. Hearsey retains his connection with the Empire Rubber Co., whose selling-agent he is. The Empire Rubber Co. has been, and is, very busy in manufacturing bathing-caps and other rubber goods for the bathing season.

## TRADE AND PERSONAL NOTES.

AT the annual meeting last month of the National India Rubber Co. the following directors were elected: Frederick M. Shepard, John McAuslan, Joseph Banigan, Robert D. Evans, and Samuel P. Colt. The list of officers now embraces Samuel P. Colt, president and treasurer; W. De F. Brown, secretary; Charles A. Emerson (formerly secretary) purchasing-agent; and H. H. Shepard, general selling-agent.

—The new offices of the Woonsocket Rubber Co. in Providence are located on the sixth floor of the magnificent Industrial Trust building that has just been completed. It is by all odds the finest office-building in Providence. The arrangement of the offices of the Woonsocket company is as follows: First comes the private office of President Banigan and his son, John J. Banigan. Adjoining this is the office of William B. Banigan, manager of the Marvel Rubber Co. On the other side of Mr. Joseph Banigan's office is that of Mr. George Watkinson, assistant manager of the United States Rubber Co., and next to this the office of Mr. Frederick Cook, treasurer of the Woonsocket company; then following the line of the building are arranged the twenty or more desks of the clerical force of the company. Across the passage that runs the length of the building is the office of Mr. McElroy, Mr. Walter S. Ballou, and others, of the Woonsocket company. The offices are very handsomely fitted in oak, with electric lights and all the modern conveniences. On the same floor and at the other end of the building are the new offices of the National India Rubber Co. First is the handsome office of Mr. H. H. Shepard, sales-agent of the National, then the office of Mr. Charles A. Emerson, purchasing-agent, then the directors' offices, and the desks of the clerical force arranged much as are those of the Woonsocket company, but on the opposite side of the building.

—The Protector Rubber Felt Boot Co. have been incorporated under the laws of Maine, with \$100,000 capital, for the manufacture of rubber and felt boots and shoes at Peterboro, N. H. They have purchased, for \$15,000, the plant of the Peterboro Improvement Co., including a factory five stories high, 200 x 45 feet, built in 1884 at a cost of \$22,000. It was occupied until last fall by C. A. Coffin & Co., whose business is now at Lynn, Mass., and is considered one of the best-equipped factories in the state.

—The Pará Rubber Shoe Co., though dead, still lives. Its annual meeting was held in the Sears building, Boston, on April 23, with C. H. Allen, president, T. P. Parsons, clerk, and eight other persons present. The old officers were re-elected. The plant of the company is now owned by the United States Rubber Co., but the organization retains a legal existence until some unsettled business affairs can be wound up.

—It is reported that there has been a good demand of late for rubber boots for New England on account of the large number of workmen engaged in laying sewer-, gas-, water-, and other pipes,—a work which makes the use of rubber boots desirable.

—The selling-agents of the various rubber-shoe companies have been doing the west very thoroughly of late, and some have been returned. E. H. Cutler, of the Woonsocket company, has been west since the last issue of this paper, and so has Walter S. Ballou. Chester J. Pike, of the Wales-Goodyear company, and E. H. Payne, of the American Rubber Co., are now in the west. F. D. Balderston, selling-agent at Boston of the National India Rubber Co., is expected to return from the west about this date.

—Frank Reifsnider, president of the new Diamond Rubber Co., of Akron, Ohio, has been in New York recently completing arrangements for securing supplies for their rubber-tire factory, which is expected to be in operation by June 1. Mr. Reifsnider has been connected with the rubber-manufacturing business for twenty years, with the exception of a period spent in journalism.

—William Somerville's Sons announce a change of address for their warehouse and offices from 7A, Belvoir street, Leicester, England, to 27, King street, Liverpool. They are the sole-agents in Great Britain for the Rubber Reclaiming Co. (New York), of whose product they usually keep in stock 75 to 100 tons. It is expected that Liverpool will prove a much more convenient locality than Leicester for their shipping business.

—The stock and fixtures of the Goodyear rubber store at Hartford, Conn., whose proprietor, D. M. Baldwin, recently made an assignment, have been purchased by John Bidwell.

—The American Rubber Co. have established a distributing depot for the northwest at Omaha, Neb., to be in charge of Gus McKone.

—The Hiler Rubber Co. have been incorporated under the laws of New York state, with \$2000 capital. The directors are George B. Inman and Willard F. Inman, of New York city, and George A. Hiler, of Ludington, Mich.

—George A. Weaver, of Newport, R. I., has received the contract to supply the local fire-department with 500 feet each of the Maltese Cross and Crescent brands of rubber hose.

—The Manhattan Rubber Manufacturing Co. began late in April running their plant at Passaic, N. J., night and day, employing a night force of 150 men. The success of the new company has been such that already an addition to their plant is talked of.

—The Candee rubber-works at New Haven, after a shut-down of five weeks for inventory and repairs, were started on April 23 with a full force.

—The Goodyear's Metallic Rubber Shoe Co. started up their factory at Naugatuck, Conn., on April 23, with some very large orders ahead.

—The Peerless Rubber Manufacturing Co. (New York) announce, under date of May 1, the appointment of Charles H. Dale, hitherto sales-agent of the company, to the position of general-manager.

—The New York Belting and Packing Co., Limited, suggest that they have done the cycling fraternity a good turn in devising so excellent a tire as the New York Key tire, and that now the cyclists might do themselves a good turn by investigating the merits of the tire and putting it on their wheels, on the principle that one good turn deserves another. Those who have tried the Key tire are pleased with its simplicity, lightness and resiliency. A mere turn of a key tightens or loosens the cover, so that the inner tube is easily examined or repaired.

—A western newspaper chronicles the fact that during the month of March, 1894, the B. F. Goodrich Rubber Co. (Akron, Ohio) paid to John F. Palmer, the patentee of the Palmer tire, \$17,000 in royalties, which speaks well for the popularity of that tire.

—The Hersey Manufacturing Co., of South Boston, have installed a small rubber plant for the purpose of making the hard-rubber parts of their meters.

—Samuel Kidder, of Boston, is marketing a new packing which he calls the "Golden Rod" sheet packing. It is said to be selling well.

—The United States Rubber Co. have ordered forty Wellman sole-cutting machines for use in their various factories.

—The Norfolk Rubber Co., of Boston, removed, on May 1, from No. 170 Chauncey street, to No. 91 Bedford street, where they have larger and better quarters.

—The Staple Fastening Machine Co. (Boston) who brought out a machine for sewing belts, which has been described in THE INDIA RUBBER WORLD, have issued a very pretty calendar, which is now hung in the offices of most of the mechanical-goods manufacturers. It is adorned with sample pieces of rubber, leather, and cotton belts sewed by their new process.

—It is reported that Smith W. Kimble, the inventor of the recovered rubber-atomizer, has sold the right to use his machine to the Rubber Reclaiming Co. until 1907, the consideration being \$300 per month royalty and \$1400 for each machine. He has also sold a right to a Holyoke paper-mill for use in treating wood-pulp.

—On April 17 the cable companies announced that the government land lines were out of order and telegraphic communication interrupted between Maranhão and Pará. On April 18 the land lines were repaired and telegraphic communication restored. On April 25 another interruption of the land lines was announced, but in the afternoon of the same day another announcement was made that they had been repaired. The cable communication between the two places has been interrupted since March 24, but no great difficulty is experienced on this account. The causes of the interruptions are not stated, but they were probably related to weather changes.

—Walter A. Clapp, salesman for the Hodgman Rubber Co. writes to THE INDIA RUBBER WORLD from Bangor, Me., alluding in the most tempting manner to the salmon that have been caught in Bangor Pool this season.

—Snedcor & Hathaway, Nos. 124-126 Jefferson avenue, Detroit, Mich., have taken the Detroit agency for the Meyer Rubber Co.'s boots and shoes.

—Dages, Andrews & Co., Columbus, Ohio, are general-agents and large distributors of the Boston Rubber Shoe Co.'s goods through Ohio, Indiana, West Virginia, and Kentucky.

—The Crescent Insulated Wire Co. (Trenton, N. J.) are running full time and have been quite busy, even during the dull season.

—The Eastern Electric Cable Co. (Boston) have added a three-story brick building to their plant. The building is 101 x 45 feet in dimensions and is built in the most substantial manner. The company have purchased considerable land recently, so that they own nearly the whole square bounded by Tremont, Vernon, Hampshire, and Culvert streets. They have also added to their plant a Fitchburg engine and three Kendall boilers.

—The B. F. Goodrich Rubber Co. (Akron) say of the Stirling boiler: "We have used for the past eighteen months a Stirling water-tube boiler, 300 horse-power. We are well satisfied with it and do not regret the investment. We have spent nothing for repairs, although the boiler has been in constant use since its purchase."

—C. E. Hudson & Co., at Leominster, Mass.; Prescott Brothers, Cornhill, Boston; and M. D. Jones & Co., also of Boston, owners of the Hudson hose-menders and the Jones hose-menders, have entered into a combination regarding the price that shall be put on these menders, the design being to enable the retail and jobbing trade to buy both of the above-mentioned menders of any of the three firms at bottom prices.

—Hamilton S. Lockwood, who has been with the New York Belting and Packing Co. for some time past as salesman, will attend hereafter to the New England trade of the Stoughton Rubber Co., handling only mechanical goods.

—A mechanical-goods concern in New York has ordered one of the Wellman sole-cutting machines for cutting out pieces of rubber for hollow rubber balls.

—The annual meeting of the Joseph Dixon Crucible Co. was held at Jersey City, N. J., on April 16. The old board of directors was reelected by a vote of 7215 votes of the 7345 shares represented. The board consists of E. F. C. Young, John A. Walker, Daniel T. Hoag, Richard Butler, William Murray, Joseph D. Bedle, Jerome D. Gillett. In the organization of the board E. F. C. Young was elected president; John A. Walker, vice-president and treasurer; and George E. Long, secretary. The Dixon company was founded by Joseph Dixon in 1827, and organized as a stock company in 1868.

—The Newport Elastic Fabric Co., of Newport, R. I., has made an assignment to C. A. Ives.

—C. J. Bailey, of Boston, is on a two weeks' business trip through the west.

—W. H. Adams, who was until recently a fire-hose salesman for the Boston Woven Hose and Rubber Co., has opened an office for himself at No. 115 Devonshire street, Boston. He carries the fire-hose of Cornelius Callahan and general fire-department supplies.

—Nova Scotia newspapers report the burning of the Bass river plant of the Fossil Flour Co. at Nova Scotia.

—The Marron Manufacturing Co. is the name of a new concern in Stoughton, Mass., who manufacture mackintoshes and proof-cloth for the trade. They have purchased the plant formerly owned by the Norfolk Rubber Co., and are said to be turning out excellent goods.

—An exceedingly complete rubber plant is that of the American Wringer Co., at Woonsocket. They have a full complement of washers, grinders, calenders, vulcanizers, and special machines for finishing the rolls. Their capacity is some 5000 rolls per day, and at present they are very busy.

—Assistant Manager George Watkinson, of the United States Rubber Co., is perhaps as busy a man as the company has. His office is in Providence, R. I., but he is rarely found there, as his duties take him from one factory plant to another and he is constantly on the go.

—J. Bradford Sargent, New England agent for the Stirling boiler, has removed from No. 620 Atlantic avenue to No. 8 Oliver street, Boston. His new offices are very centrally located and handsomely furnished, and he extends a cordial invitation to all who are possible purchasers of boilers to look in and see the facts, figures, and testimonials that the Stirling can furnish.

—A very dainty feature in the furnishing of the Metropolitan rubber store on Summer street, Boston, is a floor mirror so arranged that it shows the rubbers when fitted to the feet. It stands about three feet high in a handsome oak frame with the word "Rubbers" carved from the wood on the upper part of the frame.

—H. O. Canfield (Bridgeport, Conn.) is running ten Boomer presses and four Clark presses on specialties in mold-work, and keeps busy, be the times good or bad.

—The New York Belting and Packing Co. find that their orders this year are numerically much larger than those of a year ago. The policy of buyers, however, in sending in orders simply for immediate needs, results in smaller contracts than have been placed in the past.

—Rumor has it that ex-Governor A. O. Bourne, of Rhode Island, is to start a rubber-factory in Providence.

—The New York Belting and Packing Co. have received from the World's Columbian Commission a certificate as to the excellence of material and workmanship for belting shown at the World's Fair.



—A new company has been recently formed in New York for the manufacture of gas-pipe tubing. It is known as New York Gas Tubing Co.

—George A. Alden & Co. (Boston) have removed from their old time offices at No. 200 Devonshire street, to No. 87 Summer street, where they have elegant offices.

—The Boston Rubber Shoe Co. are adding to their immense plant known as Factory No. 1 new buildings and new machinery. This machinery consists of a 1500 horse-power engine, seven new grinders, and an immense amount of new shafting.

—General-Manager L. K. McClymonds, of the Mechanical Rubber Co., has recently taken up bicycle-riding. He uses the "Triangle" wheel, built by the Peerless Manufacturing Co. (Cleveland), which he confidently asserts is the equal, if not the superior, of any wheel in the world.

—The Brook Haven Rubber Co. (Setauket, L. I.) will discontinue making rubber boots and shoes on May 15. They have a well-equipped plant and propose to engage in the manufacture of mechanical rubber goods. They intend to give especial attention to the manufacture of bicycle-tires, and invite correspondence from bicycle-manufacturers who desire to contract for supplying any and all grades of tires. The New York office has been removed from No. 144 Duane street to No. 88 Reade street.

—The following announcement has been made by the Mechanical Rubber Co.: "A dividend of 4 per cent. on the preferred stock has been declared out of the earnings of the company for the year ending June 30, 1893, payable on and after May 21, 1894, at the office of Messrs. August Belmont & Co., No. 23 Nassau street, New York. The transfer books will close at the office of Messrs. August Belmont & Co. on Saturday, May 12, 1894, at 12 M., and reopen on May 22, 1894."

—The new industrial-school building at Havana, Cuba, 15 x 48 meters, of iron and cement, is to be constructed by the Berlin Iron Bridge Co. (East Berlin, Conn.). The same firm have designed and will erect the iron roof of the new electric-light and -power station for the Brush Electric Light Co., at Baltimore, Md., which will be one of the finest in the southern states. The boiler-room is 83 x 129 feet, and the dynamo-room 130 feet square, the floor-space in the latter to be entirely free from posts. Dr. Drysdale, of Philadelphia, has placed the contract for an iron roof over the new power-house for the Hospital for the Insane, at Norristown, Pa., with the Berlin Iron Bridge Co. It was desired that the roof be fireproof and ordinary corrugated iron could not be used on account of the drip, so that the roof will be covered with the Berlin company's patent anti-condensation corrugated-iron covering.

#### INDIVIDUAL MENTION.

MR. ARTHUR LEONARD, formerly of the Franklin Rubber Co. (Boston), is now a prosperous farmer at Millis, Mass. He has fully regained his health and is happy as a lord in his new vocation.

—Mr. Ratcliffe Hicks, president of the Canfield Rubber Co., has been investing in New Orleans real estate, which prompts the *Times-Democrat* of that city to devote a column to Mr. Hicks and to print a portrait of him which, it is to be hoped, he will regard too leniently to permit him to bring a suit for libel against the editor.

—Mr. Richard E. Pickthall, of the Davidson Rubber Co. (Boston), was a recent visitor at the office of THE INDIA RUBBER WORLD. Mr. Pickthall is superintendent of the Davidson Company and his visits to New York are as rare as they are pleasant.

—Mr. F. H. Robinson, of Betts & Robinson, rubber brokers (New York), was married on Wednesday, April 25, in the Mamaroneck (N. Y.) Methodist church to Miss Alettha H. Stiles, daughter of Mr. and Mrs. William H. Stiles, of Scarsdale, N. Y. Mr. Stiles is in business in New York city. After the wedding, a reception was held at the home of the bride's parents, and in the evening Mr. and Mrs. Robinson started on their wedding tour, going first to Montreal, Canada. They intend to make an extensive tour over Canada and the western states. Several rubber-men attended the wedding, including Mr. Betts, and the Whitehead brothers of Trenton, N. J. A special car was provided by Mr. Robinson for those who went from New York. Mr. and Mrs. Robinson will probably make their home in Brooklyn.

—Mr. W. B. Norton, the representative of the New York Commercial Co. at Pará, who left his post a few weeks ago on account of ill health, is still in the Barbadoes, and the latest news from him is to the effect that his health is improving rapidly. During his absence Mr. F. W. Dunbar, his associate, is in charge of the Pará house.

—Mr. R. A. Loewenthal, of Loewenthal & Morgenstern, sailed for Europe about two weeks ago, on a trip combining business and pleasure, and is not expected back before July.

—A contribution to a recent number of the *Century Magazine*, by Mr. Ratcliffe Hicks, on "Abraham Lincoln as an Advocate," has reached the author's friends in the form of a neat reprint.

—Dr. Mason, of the Simplex Insulated Wire Co. (Boston), is traveling in Egypt on account of being in ill-health.

—Mr. Samuel Cabot, the Boston chemist whose blacks are largely used in the rubber trade, recently addressed the Eliot Club on the Shakspearean question. Mr. Cabot is one of those who believe that Lord Bacon was the author of Shakspeare's plays.

—Mr. Hermann Reimers, of the firm Reimers & Meyer, New York, returned from Pará on May 3, on the steamer *Basil*, after an absence of exactly two months. Mr. Reimers visited Pará, Manáos, and other places in Brazil.

—Mr. William Lincoln Sage, of Boston, on a recent fishing trip, caught fourteen six-pound trout, which is an exceedingly good string at this time.

#### TRADE PUBLICATIONS.

"THE Tire Manual" of the Gormully & Jeffery Manufacturing Co. (Chicago) contains in concise form many suggestions of value to bicyclists on the care of tires and the location and remedy of leaks. It contains also their retail price-list for 1894 of tires and other bicycle accessories, including valve-parts. Illustrations are plentifully used to make the meaning of the suggestions plainer.

—That charming little brochure "From the Forest to the Foot," has been brought out anew this year, with some of the most artistic illustrations that have ever been put into a work of this kind. Although the pamphlet is a small one, these illustrations are forty-six in number, printed in colors, and give an excellent idea of the processes of rubber-gathering, the unique figures who do the gathering, and later the various processes of manufacture. The copyright is taken out in the name of G. L. Richards, and the *motif* of the book is to give the millions an outline of the rubber business, and incidentally call their attention to that most successful of all rubber-shoe plants, the Boston Rubber Shoe Co.

#### CATALOGUE RECEIVED.

Norfolk Rubber Co., Boston.—Highest Grade Mackintoshes. 12 p. [Plates illustrating new styles of garments, with descriptions and directions for ordering by mail.]

## REVIEW OF THE RUBBER MARKET.

THERE are no important changes to record for the month that has elapsed since our last review. That there has been no improvement in the general business situation, is well known, and the rubber trade has not proved an exception to the rule. There have been no large sales of crude rubber, though the aggregate of small sales presents a better figure than had been anticipated. Prices, on the whole, may be said to have remained firm during the entire month, though in a few cases a decline of half a cent in fine Pará and a cent in coarse occurred. This, however, is significant of no downward movement. Every time a steamer brings a large cargo of crude rubber, those who have small lots to sell are apt to yield a point; but the important dealers see no reason for any lowering of prices. It is confidently asserted that even if the business stagnation should continue for some considerable time, prices would remain at the present level. Several reasons are given for this. In the first place, Europe is doing a good and substantial rubber business, and its increasing demand for crude rubber practically offsets the falling off in our own demand due to the temporary depression. Thus in April 670 tons of Pará rubber were shipped to England alone, against 410 shipped to this country. In the second place, the Pará crop is practically all in, and no heavy additions to the present accumulated stock can be made. Now the consumption of rubber has of late kept pace with the production, and the extended use of rubber in new industries and applications is constantly adding to the demand without any provisions being made to provide a corresponding increase in the supply. Those who hold rubber are not prepared to make any sacrifices and to sell at a loss, which any sale at lower quotations than those prevailing would involve. There is no panic in the business world, and money is abundant. Nobody has been speculating, and hence it is to nobody's interests to "break the market" by offering his rubber at a loss. In the past, whenever rubber went down to very low figures, the result was due to over-speculation. But everybody knows that the slow recovery from the commercial panic of last year has discouraged all speculation. There is an immense difference between a panic and a condition of depressed trade which, in the nature of things, must go on slowly improving. "Rubber is as good as gold" is an expression used by some in the trade. With money so cheap and easy, there is no reason for any sacrifices on the part of those who have large quantities of rubber on hand. They can wait a few months, if necessary.

The chances are that they will. It is becoming evident to business men that it is unwise to rely upon Congress for any improvement or effort to put an end to the uncertainty and stagnation from which trade is suffering. There is no better prospect of the passage of a tariff bill now than there was a month or two months ago. The tariff has become a sort of joke in the business world, though of a rather depressing kind. So those manufacturers who have been waiting for the passage of a tariff bill had better calculate upon another and safer basis. On the other hand, some competent men say that the tariff would do little more towards improving business than the silver repeal-bill or the Seignorage veto, both of which have proved disappointing in their effect on industry. Last year's panic was severer than people realized at the time, and it will take longer to recover from it than was expected. The great coal strike and the Coxey movement are also factors in hindering a speedier recovery from the depression.

The rubber boot- and shoe-manufacturers are expected to start up within a short time, and that is bound to stimulate the market, though they do not appear individually as buyers. Business is still very quiet with the mechanical-goods and rubber-clothing manufacturers. In the hose and tire lines there is greater activity. In hard rubber things are quiet, owing to the small business done by the electrical concerns.

In addition to the arrivals from Pará below given, there are afloat the steamers *Hildebrand* and *Cearense*, the latter due on the 16th and the former on the 24th of this month. Each of them carries a large rubber cargo.

The demand for Africans is growing steadily, as the natives are learning to handle the sap more carefully and the product reaching the European and American markets is better and purer. In Africans, as in the other sorts, only a hand-to-mouth business was done during the last month, but the aggregate of the sales has been considerable.

The latest quotations in the New York market are:

Pará, fine, new.....	65@66	Sierra Leone.....	20@31
Pará, fine, old.....	70@72	Benguela.....	43
Pará, coarse, new.....	43@47	Kongo Ball.....	37@38
Pará, coarse, old.....	none here	Cameroon Ball.....	34
Caucho (Peruvian) strip	43	Flake, Ord. and Lump....	25@26
Caucho (Peruvian) ball.	47	Accra Flake.....	14@15
Mangabeira, sheet.....	30@37½	Liberian Flake.....	21
Esmeralda, sausage....	46	Madagascar, pinky.....	57@58
Guayaquil, strip.....	27@33	Madagascar, black.....	42
Nicaragua, scrap....	43½	Borneo.....	26@40
Nicaragua, sheet.....	41½	Gutta-percha, fine grade..	1.30
Thimbles.....	35@36	Gutta-percha, medium....	1.00
Tongues.....	30@35	Gutta percha, hard white.	85

The statistical position of Pará rubber in New York and elsewhere is as follows:

	Fine and medium.	Coarse.	Total.	Total 1893.
Stock, March 30, 1894.....	1368	93	1461	= 1109
Arrivals, April.....	703	271	974	= 1626
Aggregating.....	2071	364	2435	= 2735
Deliveries, April.....	715	255	970	= 1387
Stock, April.....	1356	109	1465	= 1148
			1894.	1893.
Stock in England, April 30.....			1350	635
Deliveries in England, April.....			650	426
Pará receipts, April.....			970	1075
Stock in Pará, April.....			471	1025
World's supply, April 30.....			4372	3528
[Excluding caucho.]				
Pará receipts, June-April.....			18,130	17,405
[Ten months of crop year.]				

## PRICES FOR APRIL.

	Fine. 1894.	Coarse.	Fine. 1893.	Coarse.	Fine. 1892.	Coarse.
First.....	66	45	76	51	71	50
Highest.....	66	45	76	51	71	50
Lowest.....	65	43½	75	49	68	46
Last.....	66	43½	75	49	68	46

In regard to the financial situation Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper (New York) advise us as follows:

"On April 28 our banks still held over \$80,000,000 reserve in excess of legal requirements. There is still a notable scarcity of rubber paper, with rates unchanged from those we last quoted, viz.: 3½ per cent. for first-class receivables, and 4½ @ 5½ per cent. for gilt-edge single-name notes, all three to six months to run."

## IMPORTS FROM PARA.

THE imports in detail of rubber direct from Pará at the port of New York, since our last report, have been as follows, all quantities being expressed in pounds:

April 15.—By the steamer *Origen*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Totals.
New York Commercial Co.	184,200	18,200	47,600	300	250,300
Joseph Banigan.....	144,900	24,500	47,000	10,400	226,800

Reimers & Meyer .. . . .	65,300	14,300	42,800	10,900	133,300
Sears & Co .....	47,900	8,400	25,500	.....	81,800
L. G. Mayer & Co.....	32,200	.....	.....	.....	32,200
Shipton Green... ..	8,700	1,900	8,400	.....	19,000
Boston Rubber Shoe Co...	.....	.....	.....	12,000	12,000
Lawrence Johnson & Co...	.....	.....	3,500	.....	3,500
Total.....	483,200	67,300	174,800	33,600	758,900

April 7.—By the steamer *St. Romans*:

George A. Alden & Co...	30,868	.....	.....	.....	30,868
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## Mould Work and Mould Work Alone

IS WHAT WE SEEK.

It is Our Specialty and we do it better, cheaper, quicker, than any-one else in the trade.

H. O. CANFIELD,

BRIDGEPORT,

Mention the India Rubber World when you write.

CONN.

### SYRINGE BOXES

OF WHITE WOOD, BASS, OAK, ASH, &c.

FINE WORK. LOW PRICES. PROMPT SHIPMENT.

Estimates and Samples Furnished on Application.

ALSO ANY OTHER KIND OF

### FANCY WOOD BOXES MADE TO ORDER.

Extensive Facilities enable us to Guarantee Satisfaction.

Henry H. Sheip & Co.

1702-10 RANDOLPH ST., - PHILADELPHIA, PA.

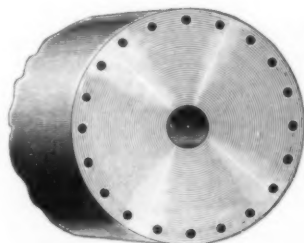
## GOLDEN SULPHURET OF ANTIMONY.

PREPARED EXPRESSLY FOR  
THE RUBBER TRADE.

THE  
ATLAS  
CHEMICAL CO.  
Newtonville, Mass.

H. B. CHAMBERLAIN,  
Manager.

OLD STYLE.



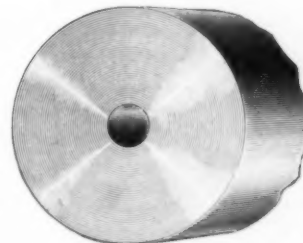
## COOLING ROLLS

FOR

Grinders, Mixing Mills and Calenders.

New Style Roll cools from a blistering heat to a stone cold in four minutes. They run at more than twice the speed of the old rolls, and do more than twice the work. They can cool with water many degrees warmer than can the old style. They can cool as well in Summer as in Winter. They require but a small fraction of the water used in cooling the old style roll.

NEW STYLE.



AUTOMATIC RUBBER MIXER CO.,

275 Devonshire St., Boston.



April 30.—By the steamer *Clement*, from Pará :

Reimers & Meyer	66,400	5,400	40,100	2,200	114,100
Charles Ahrenfeldt & Son	7,400	.....	900	51,900	60,200
New York Commercial Co.	12,100	5,500	11,600	20,700	49,900
Lawrence Johnson & Co.	33,900	1,000	11,700	.....	46,600
Joseph Banigan	3,600	4,600	13,700	16,700	38,600
Sears & Co.	10,800	1,200	8,500	7,800	28,300
Shipton Green	20,700	300	3,700	.....	24,700
Boston Rubber Shoe Co.	.....	.....	.....	18,400	18,400
G. Amsinck & Co.	14,300	400	2,800	.....	17,500
Total	169,200	18,400	93,000	117,700	398,300

May 3.—By the steamer *Basil*, from Pará and Manaus :

Reimers & Meyer	199,700	38,200	63,700	.....	301,600
Boston Rubber Shoe Co.	69,100	10,300	25,700	1,700	106,800
J. Banigan	69,100	10,300	25,700	.....	105,100
Lawrence Johnson & Co.	16,800	3,600	12,900	.....	33,300
Chas. Ahrenfeldt & Son	800	.....	.....	32,400	33,200
New York Commercial Co.	4,500	400	2,400	.....	7,300
Hagemeyer & Brunn	6,400	.....	1,400	.....	7,800
G. Amsinck & Co.	1,800	.....	800	1,200	3,800
Shipton Green	1,800	300	200	.....	3,300
Total	370,000	63,100	133,800	35,300	602,200

### IMPORTS OF CENTRALS.

BELOW will be found in detail the imports at New York, during April, 1894, of India-rubber from Mexico, Central America, and South America, other than Pará grades :

APRIL 1.—By the <i>Newport</i> =Colon:	POUNDS.
G. Amsinck & Co.	5,000
Piza, Nephews & Co.	5,058
Lawman & Kemp	1,900
Sears & Co.	1,142
C. Roldan & Van Siekel	1,000
A. N. Capens Sons	340
F. Probst & Co.	200
Total	14,640

APRIL 3.—By the <i>Knickerbocker</i> =New Orleans:	POUNDS.
Earle Brothers	10,000
W. H. Crossman & Brothers	2,500
Gillespie Bros. & Co.	2,400
Total	14,900

APRIL 4.—By the <i>Panama</i> =Colon:	POUNDS.
Eggers & Heinlein	600

APRIL 4.—By the <i>Concho</i> =Vera Cruz:	POUNDS.
Theo. Hermann	250
J. W. Wilson	325
Graham, Hinkley & Co.	1,125
Total	1,700

APRIL 4.—By the <i>Elmar</i> =New Orleans:	POUNDS.
To Order	2,800

APRIL 9.—By the <i>Louisiana</i> =New Orleans:	POUNDS.
W. H. Crossman Brothers	11,700
Cerf, Hirsch & Co.	2,300
Total	14,000

APRIL 12.—By the <i>Vigilancia</i> =Vera Cruz:	POUNDS.
G. Amsinck & Co.	250
Graham, Hinkley & Co.	800
Marquardt & Co.	128
E. Zarous & Co.	625
Total	1,803

APRIL 13.—By the <i>Columbia</i> =Colon:	POUNDS.
G. Amsinck & Co.	15,078
W. R. Grace & Co.	6,145
New York Commercial Co.	8,080
Herzel, Feldman & Co.	4,560
Munoz & Esprella	4,000
A. Santos & Co.	5,000
W. Loaliza & Co.	1,714
Lawman & Kemp	1,120
Dumarest Brothers	1,094
Samper & Co.	862
G. Pardo & Co.	574
A. P. Strout	640
Total	50,146

APRIL 15.—By the <i>John Wilson</i> =Bluefields:	POUNDS.
Earle Brothers	2,600
A. N. Rotholz	1,100
Total	3,700

APRIL 15.—By the <i>Cuidad Condal</i> =Vera Cruz:	POUNDS.
Marquardt & Co.	200

APRIL 16.—By the <i>Adirondack</i> =Cartagena:	POUNDS.
G. Amsinck & Co.	250
Schulz & Ruckgaber	500
D. A. De Lima & Co.	300
Pim, Forwood & Co. (for London)	1,625
Total	2,675

APRIL 17.—By the *Elkio*=New Orleans :

W. R. Grace & Co.	5,400
Earle Brothers	7,600
Total	13,000

APRIL 17.—By the *Hudson*=New Orleans:

A. N. Rotholz	375
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APRIL 18.—By the *Seneca*=Vera Cruz:

J. Agostini	125
Seager, Guernsey & Co.	500
Total	625

APRIL 12.—By the *Delta*=Greytown :

To Order	3,375
Isaac & Samuel	750
Hoadley & Co.	1,750
H. Mandell	875
G. Amsinck & Co.	2,750
A. P. Strout	9,375
Eggers & Heinlein	1,250
Andreas & Co.	1,575
Total	21,990

APRIL 23.—By the *City of Pará*=Colon :

Piza, Nephews & Co.	6,497
G. Amsinck & Co.	5,192
New York Commercial Co.	6,584
J. Aparicio & Co.	2,873
R. F. Cornwell	2,661
J. G. Toegel	2,378
Marquardt & Co.	1,514
Lawman & Kemp	415
A. P. Strout	390
Ellinger Brothers	104
Total	28,609

APRIL 25.—By the *Knickerbocker*=New Orleans:

To Order	4,400
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APRIL 25.—By the *Panama*=Vera Cruz:

J. W. Wilson & Co.	875
G. Amsinck & Co.	250
Total	1,125

APRIL 25.—By the *Seguranca*=Vera Cruz:

Jacob Balz	125
James Eward	625
Graham, Hinkley & Co.	500
Total	1,250

APRIL 26.—By the *Elmar*=New Orleans:

To Order	4,600
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APRIL 30.—By the *Louisiana*=New Orleans:

Betts & Robinson	5,050
Earle Brothers	1,000
Total	6,050

APRIL 30.—By the *El Norte*=New Orleans:

To Order	800
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Total Imports of Centrals	190,185
Total for March	224,500
Total for February	308,511
Total for January	214,247
Total for December, 1893	218,047
Total for November	251,676
Total for October	255,321
Total for September	143,364
Total for August	134,636
Total for July	263,526
Total for June	190,971
Total for May	257,483
Total for April	200,389
Total for March	277,450
Total for February	244,825
Total for January	222,308

### IMPORTS OF AFRICANS.

THE figures below show in detail the imports of African rubber at New York during the month of April, 1894 :

APRIL 7.—By the <i>Lucania</i> :	POUNDS.
George A. Alden & Co.	3,037
APRIL 7.—By the <i>P. Caland</i> :	
Earle Brothers	3,500
APRIL 7.—By the <i>Chester</i> :	
George A. Alden & Co.	17,974
APRIL 7.—By the <i>Russia</i> :	
George A. Alden & Co.	28,555
W. A. Brown & Co.	8,818
Robert Soltau & Co.	20,050
APRIL 7.—By the <i>Cervie</i> :	
Reimers & Meyer	7,569
APRIL 12.—By the <i>Britannic</i> :	
George A. Alden & Co.	50,210
APRIL 12.—By the <i>Umbria</i> :	
Reimers & Meyer	33,338
W. A. Brown & Co.	11,265
APRIL 12.—By the <i>Peninsular</i> :	
New York Commercial Co.	66,921
George A. Alden & Co.	35,250
APRIL 12.—By the <i>Moravia</i> :	
George A. Alden & Co.	4,797
H. H. Smythe	1,541
APRIL 12.—By the <i>Berlin</i> :	
W. A. Brown & Co.	50,000
George A. Alden & Co.	10,000
APRIL 20.—By the <i>Majestic</i> :	
Reimers & Meyer	12,994
APRIL 20.—By the <i>Campania</i> :	
George A. Alden & Co.	18,063
Reimers & Meyer	4,702
APRIL 20.—By the <i>Nomadic</i> :	
George A. Alden & Co.	22,615
APRIL 20.—By the <i>Stubbenhuk</i> :	
W. A. Brown & Co.	6,000
APRIL 25.—By the <i>Olinda</i> :	
George A. Alden & Co.	25,025
APRIL 25.—By the <i>Arizona</i> :	
Reimers & Meyer	11,569
APRIL 25.—By the <i>Etruria</i> :	
George A. Alden & Co.	1,774
George A. Alden & Co.	567
APRIL 25.—By the <i>Rhaetia</i> :	
George A. Alden & Co.	3,785
Robert Soltau	9,321
Total for New York	464,350
Total in March	624,327

### EAST INDIAN IMPORTS.

APRIL 20.—By the <i>Benvenue</i> :	
Reimers & Meyer	2,158
APRIL 20.—By the <i>New York</i> :	
Reimers & Meyer	1,587
APRIL 20.—By the <i>Circassia</i> :	
Reimers & Meyer	4,386
APRIL 25.—By the <i>Anchoria</i> :	
Reimers & Meyer	12,312
Total East Indian	20,443

### BOSTON ARRIVALS.

APRIL 3.—By the <i>Pavonia</i> :	POUNDS.
George A. Alden & Co., Africans	24,580
APRIL 13.—By the <i>Milaneze</i> :	
George A. Alden & Co., East Indian	106,000
George A. Alden & Co., Africans	4,500
APRIL 20.—By the <i>Bothnia</i> :	
George A. Alden & Co., Africans	380
APRIL 25.—By the <i>Sagamore</i> :	
George A. Alden & Co., Africans	740
Total Africans	30,200
Total East Indian	106,000
Grand Total	136,200
Total Boston Imports, March	111,250
Total for February	154,140
Total for January	58,600
Total for December	308,364
Total for November	78,078

